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ACADEMIC LABOR MARKETS.

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THE STUDY ATTEMPTED TO IDENTIFY, DESCRIBE, AND EVALUATE THE CURRENT PROCEDURES BY WHICH COLLEGE JOBS ARE FOUND AND FILLED, AND TO UNDERSTAND THE STRUCTURE OF THE ACADEMIC LABOR MARKET AND THE ACTIVITIES OF NEARLY 2,500 PLACEMENT AGENCIES. QUESTIONNAIRES WERE MAILED TO 10,312 PERSONS, OVER ONE-THIRD OF ALL NEWLY APPOINTED COLLEGE TEACHERS, WHO REPRESENTED ALL DISCIPLINES, ALL REGIONS OF THE COUNTRY, ALL ACADEMIC RANKS, AND ALL SIZES OF INSTITUTIONS. OVER 70 PERCENT RETURNED USABLE QUESTIONNAIRES. SOME OF THE CONCLUSIONS WERE--(1) ABOUT ONE-SIXTH OF ALL COLLEGE FACULTY MEMBERS ARE "FRESHMEN OR TRANSFERS," (2) OUT OF 10 VACANCIES, FOUR AND A HALF OCCUR FROM EXPANSION, TWO AND A HALF FROM PROFESSORS SWITCHING COLLEGES, TWO FROM PERSONS LEAVING THE TEACHING PROFESSION, AND ONE BY PROFESSORS GOING ON LEAVE, (3) TEN NEWLY HIRED COLLEGE TEACHERS WILL INCLUDE FOUR GRADUATE STUDENTS, THREE PROFESSORS CHANGING INSTITUTIONS, ONE PRIMARY OR SECONDARY TEACHER, ONE BUSINESS OR GOVERNMENT EMPLOYEE AND ONE FROM OTHER EXPERIENCE, (4) THE AVERAGE FULL PROFESSOR SWITCHED JOBS THREE TIMES AND MOVED 1,350 MILES, (5) ACADEMIC LABOR MARKETS ARE NATIONAL AND THERE IS AN ABSENCE OF LARGE SALARY DIFFERENTIALS AMONG REGIONS, (6) THE ATTITUDE AND ABILITY OF THE INSTITUTION TOP MANAGEMENT, COURSES TO BE TAUGHT, TEACHING LOAD, RESEARCH FACILITIES, AND COMPETENCY OF PROFESSIONAL COLLEAGUES, SALARY AND FUTURE PROSPECTS, QUALITY OF STUDENTS, CULTURAL OPPORTUNITIES, ACADEMIC RANK, FRINGE BENEFITS, CLIMATE, AND NEARNESS TO FRIENDS AND RELATIVES ARE VARIABLES WHICH DETERMINE JOB CHOICE. RECOMMENDATIONS WERE--(1) TO INSTITUTE A JOURNAL OF ACADEMIC VACANCIES AND AN ACADEMIC REGISTER, AND (2) FOR BOTH EMPLOYERS AND CANDIDATES TO APPROACH THE ACADEMIC LABOR MARKET IN A MORE SYSTEMATIC MANNER. "PLACEMENT SERVICES FOR COLLEGE TEACHERS" (VT 004 312) IS A COMPANION VOLUME. (MM)

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ACADEMIC LABOR MARKETS

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ACADEMIC LABOR MARKETS

BY DAVID G. BROWN

A REPORT TO THE OFFICE OF MANPOWER, AUTOMATION AND TRAINING, U. S. DEPARTMENT OF LABOR

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by

2 DAVID G. BROWN

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David G. Brown
Chapel Hill, N.C.
November, 1965

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Primary Factual Conclusions:

1/ The present volume has been written with twin objectives in mind--one practical, the other theoretical. While analyzing the relevance of economic theory to the markets where the services of more specialized workers are proferred and purchased and striving toward a new wage and employment theory, I have tried to remain alert to the implications of the behavior observed--for society, individuals, and employers.

2/ Specifically, attention is centered on the following questions: What are the sources of imperfection in academic labor markets? What are the shapes of the demand and supply functions? What new concepts are needed to develop a wage and employment theory which is relevant to the labor markets for professional workers: How do college teachers learn about jobs? What formal procedures have been developed to facilitate college teacher placement? Why do college teachers choose particular jobs? What changes should be recommended?

3/ The main body of the text is based upon the questionnaire response of nearly 7,500 four-year college teachers who were newly appointed as of September, 1964. The 7,500 respondents are quite representative of newly appointed college teachers in all disciplines, in all regions of the country, at all ranks, at all different sized institutions of higher education (IHE's), and at IHE's of wide-ranging prestige and quality.

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Primary Factual Conclusions:

1/ Each academic year about one-sixth of all college faculty members are "freshmen or transfers" in that they are serving their first year with a new employer.

2/ Staffing problems differ in magnitude. One-fourth of all institutions of higher education (IHE's) must annually hire one new faculty member to start in the Fall for every four that finish in the Spring. At the other extreme, one-sixth of all IHE's hire less than one new faculty member for every ten continuing ones.

3/ Staffing problems differ in cause. Out of ten vacancies, approximately four and a half occur as the result of decisions to expand staff, two and a half are caused by professors "permanently" switching from one college to another and leaving a vacancy at the first, two result from persons leaving the teaching profession to enter careers with business or government or to retire, and one is caused by professors going on leave from their regular jobs and leaving one year vacancies at their regular IHE's. The greatest staffing problems are in the poorest schools. Not only are these schools experiencing the greatest difficulty in retaining their present staff but also they are currently expanding the most rapidly.

THE MOBILE PROFESSORS (Chapter 3) 33

Primary Factual Conclusions:

1/ The full-time members of the college teachingforce are predominantly male, Ph.D.-qualified, less than 50 years old, and associate or full professors. Approximately equal numbers are specialists in the natural sciences, the social sciences, and the humanities. Sixty percent reside in the North Atlantic and in the Middle West and 40% in the Southeast, Southwest and West.

2/ New faculty members are drawn from many sources. Ten newly hired college teachers will typically include 4 graduate students, 3 professors from other IHE's, 1 primary or secondary school teacher, 1 business or government employee, and 1 person from any one of a wide variety of other experiences.

3/ Graduate students are a promising source of supply because they are relatively easy to find and to rate, ready to move, and inexpensive to pay. As a rule, this source of supply provides candidates who are younger, less likely to have their doctorates, more likely to be single, less likely to have published, and more willing to accept a one-year appointment.

4/ The traditions as to when a student accepts his first job vary considerable. In the research oriented disciplines where financial support tends to be more readily available and where the marginal values of having the Ph.D. degree tend to be quite high, students are more reluctant to enter the market without their doctorates.

5/ Experienced college teachers expect to switch jobs several times during their careers. Less than one out of five professors accepts a new job with the idea of remaining until retirement. Before he reaches the rank, the average full professor has switched jobs three times and moved 1350 miles.

6/ The professors most easily lured from their present jobs tend to be young, trained in the social sciences, recipients of new Ph.D.'s while off their graduate school campus and out teaching, and overtly dissatisfied with their current situations. They tend to be located at the less prestigious schools where the probability of moving up is maximized.

7/ Most moves in the market are voluntary. That is, they are initiated by the employee rather than the employer. In general, the predominance of voluntary mobility is a reflection of the teacher shortage, although it is interesting to note that voluntary mobility is no greater in the specialties where teachers are in the shortest supply. Involuntary mobility is concentrated among the less qualified members of the teachingforce and at the lower ranks. As a rule, the better institutions are more willing to ask a man to leave.

8/ Market entry is often not obvious. Always at the periphery of the market and alert to the information that comes their way, many professors will not seek jobs. They must be recruited. Even those who are actively seeking are not always visible. Accepted tradition allows a professor not to inform his current employer of his intention to leave until after he has another job firmly in hand.

9/ Active recruitment draws personnel into college teaching. Almost one-third of all newly hired teachers do nothing to locate their current jobs and would not be teaching at an IHE this year if they had not been recruited. Mainly students, housewives, primary and secondary level teachers, and employees of government and business--these individuals are strong evidence that recruitment does pay.

SOURCES OF IMMOBILITY (Chapter 4) 65

Primary Factual Conclusions:

1/ Although artificial constraints such as employee unionization and employer collusion common in other markets are unimportant in academia, a number of other factors operate to decrease the extent and effectiveness of mobility. Among them are the ethics of the labor market, the employer hiring policy of promotion from within, seniority and tenure provisions, the non-transferability of some fringe benefits, ignorance about both job vacancies and the desirability of known openings, the costs of job finding and job switching, the economically irrational preferences of both suppliers and demanders, and the extreme specialization of resource use.

2/ The ethics of the academic labor market are such that it is improper for an individual to resign a position after May 15th and it is a general practice for employers not to approach faculty members at other IHE's after April 15th. When honored, these traditions, and others such as a six-month to a 12-month notification of termination of employment, reduce considerably the already short period during which decisions to switch jobs (and employees) can be effected without delay. Although infrequent and weak, gentlemen's agreements (non-pirating pacts) between similarly situated institutions not to raid one another's faculty also confine mobility.

3/ The tradition of hiring at the bottom of the academic ladder and filling positions at the associate professor and full professor levels by promoting the best qualified junior man means that many senior positions never face an active market. The man who is not already on the faculty at a given college often has no opportunity to compete for the associate positions at the same school. This means that, after the initial years of job shopping, mobility is more often vertical within an IHE than horizontal between IHE's.

4/ Neither tenure provisions nor fringe benefits are major sources of immobility.

5/ Ignorance, which is the product of both the unjustifiably high costs of pursuing a complete market search and the "culture of the market" which condemns overt advertising of availabilities, is a major impediment to market mobility.

6/ Because almost all job changes require geographic relocation, moves are expensive. That 35% of all newly hired professors lost more than seven days of productive time in the actual process of moving (excluding time searching for a new job) indicates that the advantages of the new jobs must be substantial in order to outweigh the costs.

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Primary Factual Conclusions:

1/ The faculty scarcity is well documented. At least since the end of the Korean War IHE's have not been able to hire all the faculty they desire.

2/ The situation is not the same, however, in all disciplines. Measuring the extent of scarcity by a composite index (called the Shortage Index) that includes factors such as the academic rank at which emerging students are hired, the average salary level, the rate of salary increase, the number of unfilled positions as a percentage of all positions, and the number of newly created positions as a percentage of all positions--the greatest scarcities are shown to be in the areas of engineering, physical sciences, mathematics, economics, and some subspecialties of psychology. Faculty are most plentiful in the humanities: especially in French, history and English.

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Primary Factual Conclusions:

1/ IHE's react to staff shortages by limiting output, altering their production function, extending their markets by more efficient and extensive recruitment, increasing salaries and other forms of remuneration, and redefining relevant supply by sacrificing quality for quantity.

2/ The institutions with the greatest staffing problems, especially the poorer ones both in terms of prestige and finances, hire almost exclusively at the beginning ranks and thereby avoid the high salaries needed to attract senior professors.

3/ Recruitment efforts are being extended. Some employers are visiting graduate school campuses to talk with prospective faculty. Others are paying the fare for candidates to visit their campuses, especially for prospects trained in shortage disciplines.

4/ The most frequent solution to staffing problems is the lowering of hiring standards. The contrast between the poor and good schools is illustrative. Whereas more than two-thirds of those hired by the good schools are Ph.D.-qualified, the poorer schools compromise their quality standards to the extent that less than one-third of their new staff holds a doctorate.

5/ Many of the more desperate staffing problems are solved by increasing the remuneration offered. Higher ranks and higher salaries are granted professors in the more scarce disciplines. The poorer schools offer higher rank in lieu of pay and prestige. Whereas the Southeast region pays its senior professors the lowest salaries of all regions, to beginning Ph.D.'s it offers salaries competitive with the Midwest and higher than either the West-Southwest or the North Atlantic.

BALKANIZATION IN THE MARKET (Chapter 7) 106

Primary Factual Conclusions:

1/ The academic labor market is non-existent. In fact, there are many submarkets divided by the noncomparability of specialists (e.g., physicists versus art professors), the preferences of suppliers and demanders, and technical and institutional considerations.

2/ The presence of balkanization in the market is both advantageous and disadvantageous to all parties involved: the employer, the employee, and society. These effects are explored in the "implications" chapter.

A BABEL OF SPECIALISTS (Chapter 8) 113

Primary Factual Conclusions:

1/ Professorial manpower is highly specialized and substitutable only to a limited extent. Loyalties to a substantive specialty are strong. Most professors think of themselves first as physicists, chemists, engineers, musicologists and second as college teachers. This specialization begins with graduate training, extends to research interests, and is preserved by narrow teaching assignments.

2/ The evidence of market balkanization by discipline is extensive. Less than one out of twenty professors accepts a teaching assignment outside his "division" (e.g., physical sciences) of specialization and less than one out of every five leaves his specific specialty (e.g., physics).

3/ A sure sign of market balkanization is the existence of substantially different terms of employment paid to different types of professors. If the market were undivided, and movement between various sectors of the market were free, then it would be expected that any differences in pay and assignments would be equalized by movement from low paying areas to the high paying ones. Yet, the differences among disciplines are substantial. Beginning Ph.D.'s in electrical engineering are paid an average of $2600 more than similarly situated historians. Teaching loads tend toward 9 hours in the physical sciences but are more typically 12 in the humanities. Beginning Ph.D.'s are virtually always appointed at the assistant professor rank when chemists or sociologists, but only two-thirds of the time when they are history, French, or English professors. Similarly, variations in rates of involuntary mobility, methods of job search, emphases upon criteria in job choice, extent of publication--each of these items indicates that all professors are not operating in the same market.

SMALL COLLEGES VERSUS LARGE UNIVERSITIES (Chapter 9) 122

Primary Factual Conclusions:

1/ College teachers tend to move between same-size schools, although exceptions are frequent. As a rule, teachers in small schools switch to jobs in other small schools, whereas professors in large universities are most likely to switch to another such school. This tendency arises probably from the substantially different emphases of large versus small schools and the consequent differences in responsibilities (e.g., teaching versus research).

2/ Several indications of submarkets according to size are the following: professors at IHE's enrolling more than 5000, as contrasted to those at IHE's enrolling less than 1000 students, are more likely to be teaching in only one field, to be teaching and researching in the same field, to be carrying a lower teaching load, and to be earning a substantially higher salary.

3/ There is also a tendency to move between IHE's of the same type. A college (4-year IHE without a graduate school) teacher is most likely to move to another college, whereas two-thirds of all teachers leaving positions in a university move to another university. As a result, the same differences in specialization, teaching loads, and salary levels that persist between IHE's of various sizes also are found between universities and colleges.

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Primary Factual Conclusions:

1/ Academic labor markets are national. Approximately half of all job-switching college teachers actually move across regional boundaries, and over two-thirds receive offers from IHE's in other regions. The average professor moves 450 miles to reach his new job. About one-fourth of all newly hired faculty have moved over 1000 miles. Geographic distance is obviously not a major balkanization.

2/ The national orientation of faculty markets is further indicated by the absence of large salary differentials among regions. The annual salary paid to beginning Ph.D.'s in the four regions range from $7,700 in the North Atlantic to $8,200 in the Great Lakes, a difference of only $500. The often observed fact that Southeastern IHE's pay, on the average, lower salaries is primarily, though not exclusively, due to their hiring less qualified faculty to staff their institutions.

3/ Regionalism is more possible in the less specialized disciplines, for more opportunities are available within a given geographic area. As a rule, the geographic breadth of a market is inversely related to the number of job opportunities available "locally." Each candidate extends his horizons until a sufficient number of options is located and considered. Consequently, the market is more national for universities, large institutions, high quality IHE's, researchers, and holders of doctorates.

4/ The most significant force for regionalism is the preference of individuals. College teachers tend to desire to return to familiar regions, regions where they grew up or went to school. This preference is expressed by a willingness to accept slightly lower salaries and academic ranks in order to gain a job in a familiar region. Since, however, most professors are familiar with most regions of the country, this preference for regionalism is not a strong balkanizing force in the market.

5/ The characteristics of the IHE's that inhabit various regions differ substantially. Disproportionately large numbers of prestigious and private IHE's are in the North Atlantic region. Almost half of the nation's junior colleges are located in California.

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Primary Factual Conclusions:

1/ By using a composite index (The Quality Index) based upon factors such as the percentage of Ph.D.'s on the faculty, the average compensation paid to the faculty, the size of the library, the faculty-student ratio, the average income per student, the proportion of undergraduate students continuing on to graduate school, the ratio of graduate students to undergraduates, and the size of the school--a rough approximation of institutional "prestige in the eyes of scholars" may be obtained.

2/ Variations in institutional prestige and stature do divide the academic labor market so that the manpower qualified to teach at the highly prestigious IHE's rarely competes with the supply to the poorest IHE's. Yet, market boundaries are defined only in a vague way. Movement among quality levels is common, even at the extremes where balkanization is the greatest. Although cliques exist, the academic labor market is not populated by tightly self-contained clusters of institutions of similar stature which trade faculty and students within the group and never allow outsiders to participate.

3/ Though movement to the top prestige schools is always a possibility, there are certain groups that are more likely to be invited than others. Publications and an orientation toward research are stressed far more by the top schools than by the others. Attendance at a top-rated graduate school, which in turn depends to some extent upon attendance at a top-rated undergraduate school, aids in gaining appointment.

4/ The salaries paid to beginning Ph.D.'s are about the same for all IHE's, regardless of prestige. The best schools pay neither more nor less. Yet, the most prestigious schools are able to be more selective in whom they hire because they offer lower teaching loads, more specialization, better research facilities, higher future incomes, and more stature.

5/ Movement up the prestige ladder is less frequent than downward movement, but by no means impossible. Thirty-two percent of the job changes are to institutions of higher prestige, 40% to lower prestige, and 28% to IHE's in the same prestige level.

DISCRIMINATION IN THE MARKETPLACE (Chapter 12) 160

Primary Factual Conclusions:

1/ Market divisions do exist by sex, by religion, and probably by race. There are submarkets in which women predominate, submarkets for Catholics and for Methodists, submarkets for non-whites and for whites. Women tend to be concentrated at women's colleges where they teach longer hours than men and are paid less. Teachers without religious preference are concentrated at non-denominational and public schools, Catholics at Catholic schools, and Protestants are at Protestant schools.

2/ Women are discriminated against. They fill disproportionately high percentages of the positions at the least prestigious schools and are underrepresented in the most prestigious ones. As a rule they have fewer alternative job options from which to choose.

3/ Much of the discrimination is, however, economically rational or self-imposed. Compared to men, women are less qualified and less committed to an academic career. Women are less likely to have earned a doctorate, to be interested in researching, to have published extensively, and to have been educated at one of the top prestige schools. At the same time, women are more likely to desire teaching assignments at women's colleges, a group of IHE's that typically pays low salaries to men and women alike.

4/ To a limited extent, the discrimination against female professors is imposed by employers and is non-economic. Even after allowing for the fact that women tend to publish less, disproportionately few women are hired by the best IHE's.

5/ Church-related IHE's hire disproportionately large numbers of teachers who are of the same faith. This is especially true in the Catholic colleges. Although persons with strong religious preferences hold jobs in the less prestigious institutions at lower salaries and higher teaching loads, the differences are attributable to the types of institutions by which they are employed, not discrimination by a single employer. To the extent that individuals of different faiths do in fact earn different remunerations, the differentials may be explained by the comparative levels of education and publishing productivity and by the preferences of the professors themselves to make choices among job offers on non-economic criteria.

THE NON-ACADEMIC LABOR MARKET (Chapter 13) 177

Primary Factual Conclusions:

1/ There are substantial flows of manpower from academia to other employments and back again. These flows have two distinct characters. The first is that of scientists primarily, who research for government and industry but later return, primarily as researchers, to college teaching. The second flow is of high school teachers who usually are drawn into college level teaching by recruiters from the poorer colleges. Taken together, these two sources account for 2 out of every 10 newly hired college teachers.

2/ In spite of these flows, a definite division does exist between academic and non-academic submarkets. The average man who enters college teaching from business sacrifices over $2500 in annual income, an indication that the monetary remunerations are substantially different. The very nature of the work inside and outside academia would seem to insure that such differentials may continue to exist.

A THEORY OF THE MARKET MECHANISM (Chapter 14) 185

Primary Factual Conclusions:

1/ An individual will extend his job search until he expects the cost of additional search to exceed the benefit of finding a better job. Both costs and benefits may be calculated. Predictions about what types of individuals will search jobs most ardously can be formulated.

2/ The theory of the market mechanism is adaptable to explaining the use of several search methods at the same time and of one search method several times -- as well as the more conventional explanations of what search methods will be used first and how many will be used in all.

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Primary Factual Conclusions:

1/ The extent to which various candidates actively search jobs may be measured by three different criteria: the number of productive days lost in search, the number of search methods used, and the number of persons who do nothing to find their jobs. As an average, approximately 8 days are lost, 3½ methods are used, and one-fourth of all professors do nothing to make their availability known.

2/ Several identifiable groups stand to gain more than other groups from job search. Candidates who have strong preferences against remaining in their current situations and a low likelihood of being found by an eager recruiter are most likely to benefit from an extensive search. Accordingly, emerging students who have no current job to fall back upon search more than non-students. Candidates in excess supply disciplines and in markets where there are many available candidates search more than the candidates who are likely to be sought and found by recruiters.

3/ The most extensive searches for jobs are pursued by the candidates who have the most to gain and the least to lose. Among the big gainers are candidates who are poorly situated and have a strong desire not to continue at their present locations, inconspicuous to recruiters because of the obscurity of their present locations, in fields of excess supply where prospects are easy to find and employers are unlikely to contact those who are not obvious. Among the big losers are candidates whose prestige might be injured by overt job seeking, candidates who might jeopardize their current jobs if their employers were to learn of their search, and candidates who cannot free the time necessary to pursue jobs.

THE JOB HUNT (Chapter 16) 218

Primary Factual Conclusions:

1/ The most acceptable method of finding a job is to do nothing, or to proceed informally through a friend or former teacher. Almost all aspirants to college teaching jobs use these methods as a first step in finding a job. When informal methods are unpromising, some candidates extent the search by consulting formal intermediaries such as college placement offices and teacher placement bureaus.

2/ The invisible, the poorly qualified, and the currently non-teaching candidates -- in short, those who stand to gain the most from an extensive market search-- tend to rely more heavily upon formal methods. The well qualified, highly demanded individuals often disapprove of using some types of formal liaisons and rely more heavily upon the informal channels of communication.

THE ROLE OF LIAISONS (Chapter 17) 230

Primary Factual Conclusions:

1/ Graduate and undergraduate school professors, classmates and colleagues, departmental offices at graduate school, publishers' representatives, college placement offices, church-related placement services, offices of professional associations, specially provided convention placement services, commercial teachers agencies, public employment service offices, and the "want ad" pages of professional journals are all sources of placement assistance used by candidates. The most popular method of job seeking is the writing of "blind letters" of inquiry to prospective employers.

2/ Graduate school professors are especially helpful to well-qualified, recent graduates who desire appointments at top-level IHE's where research is emphasized.

3/ Blind letters are used most frequently by emerging students. Although a small minority avoid letter writing because they regard such overt job seeking as "unprofessional" (4%) or "worthless" (9%), in most minds the method is both respectable and worthwhile.

4/ College placement offices, the most important of the organized liaisons, are used primarily, though not exclusively, by recent graduates. In a typical year, a large placement office is notified of approximately 7,000 vacancies, most of them at the beginning ranks. In addition to the counseling and matching services, college placement offices collect credentials and distribute dossiers that are useful to employers when evaluating competitive candidates.

5/ In spite of the fact that it is often regarded as "unprofessional" or "worthless," 7% of the job seeking college teachers register their needs with a commercial employment agency.

6/ The convention placement service is an efficient and accepted mechanism for putting employers in touch with prospective candidates. Many good jobs are found through this intermediary.

THE ADEQUACY OF MARKET INTERMEDIARIES (Chapter 18) 254

Primary Factual Conclusions:

1/ Many urge that the market mechanism be improved. Thirty-five percent of the newly hired faculty rate the current opportunities to learn about jobs in their fields as "poor" or "very poor."

2/ The areas of the market least adequately serviced by the current mechanism are not at all obvious. Dissatisfaction is equally present in large markets and small, in markets of excess demand and markets of excess supply, in the humanities as well as the sciences, in the fields with extensive outside employment opportunities and those without. Although the market may be functioning slightly better for the top prestige institutions, the sanctions against overt job seeking operate to limit the effectiveness of even this market.

3/ The efficiency, desirability, and popularity of various methods of job seeking differ greatly. The method whereby the most jobs may be found, regardless of quality, is registration with a commercial teachers' agency. The job leads from faculty colleagues are the ones most often accepted. And, as stated before, blind letters are the most frequently used method of searching job vacancies.

4/ A large number of cooperative efforts in the area of college teacher placement are under way or proposed, including The Cooperative College Registry, the ASCUS Reciprocity Agreement, the Association for Higher Education's E.R.M.I., and a proposal from U.S.E.S.

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Primary Factual Conclusions:

1/ Almost all professors have several concrete job offers (the average is three) which means that they must choose between competitive opportunities.

2/ In order of their stated importance, the following variables determine which jobs are chosen and rejected: the attitude and ability of the IHE's top management, courses to be taught, teaching load, research facilities and opportunities, competency of professional colleagues, salary, prospects for future salary increases, quality of students, cultural opportunities, congeniality of colleagues, academic rank, fringe benefits, nearness to graduate school, climate, nearness to friends and relatives, and opportunities for earning outside income.

3/ Professors choose jobs for different reasons. Publishing scholars and scientists--especially those located at large and prestigious IHE's--stress factors that relate to their research responsibilities, whereas others place greater stress upon the teaching-related aspects of competitive job offers.

4/ Professors' statements about what factors are important in job choice are a relatively reliable measure of the factors that really are important.

5/ The majority of professors "dream about" teaching at a Harvard-Yale type IHE, though many realize that such dreams are unrealistic.

TOWARD A WAGE AND EMPLOYMENT THEORY FOR PROFESSIONAL MARKETS (Chapter 20) 296

Primary Factual Conclusions:

1/ The concepts of "net advantage" and "a unit of labor" need to be very carefully specified when theorizing about the labor markets for professionals.

2/ There are many phases to the problems of defining a labor market. One of the most promising solutions is to study variations in salary structure and to express the results in terms of set theory.

3/ The concepts of labor demand, labor supply, and equilibrium also need to be clarified and specified.

RECOMMENDATIONS (Chapter 21) 309

Primary Factual Conclusions:

1/ Society is urged to institute a Journal of Academic Vacancies and an Academic Register. The need for more information on methods of job finding and opportunities in various disciplines for people of various levels of training is also expressed.

2/ Both employers and candidates need to approach the academic labor market with more information and in a more systematic manner.

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THE QUESTIONNAIRE SENT TO NEWLY HIRED FACULTY 373

AN ECONOMIC ANALYSIS OF THE ACADEMIC LABOR MARKET.........CHAPTER 1

"If one of the nation's most scarce resources, manpower capable of teaching at the college level, is to be utilized optimally we must understand better the hows and whys of college teacher mobility. It is the intent of this study to identify, describe, and evaluate--both theoretically and practically--the current procedures by which college teaching jobs are found and filled. Stress is placed upon understanding the structure of academic labor markets and the activities (use, structure, administration) of the nearly 2500 'placement agencies,' ranging from the relatively informal efforts of individual departments, with graduate schools to the highly formalized procedures of the fee-charging private employment agencies.

"Mail questionnaires to a stratified sample of over 10,000 college teachers in new jobs will be used to identify, among other things, the relative importance of various job finding methods. To understand the activities of placement agencies, selected agency heads will be interviewed personally."

The task outlined in these words of the original research proposal has been accomplished and this is the report of the results.

In recent years scholars have not neglected the study of their own institutions. From The Academic Man to Academic Women, studies have involved virtually all aspects of the academic institution. Paul Lazarsfeld and Wagner Thielens have studied The Academic Mind. The organizational structure and systems of authority of the nation's best universities have been reported by Theodore Caplow and Reece McGee in The Academic Marketplace. All of these studies, and most of the others, have, however, been conducted by sociologists from a sociological perspective. The neglect of economists, especially labor economists, in applying their analytical tools to the markets in which they and their faculty colleagues are personally involved has been longstanding.

This neglect is not, however, the product of conscious discrimination against academia as such, for labor economists have generally avoided analyses of labor markets that do not involve blue collar type workers. The New Haven worker has been studied by Reynolds, the Trenton worker by Lester, the New England worker by Myers and Schultz, and the Philadelphia worker by Palmer, to mention only a small portion of the studies of the structure of labor markets for blue collar workers. Notably absent from the literature is information on the operations of the labor markets for professional workers.

The present volume has been written with twin objectives in mind--one practical, the other theoretical. While analyzing the relevance of the economic theory of blue collar markets for the markets where the services of more specialized workers are proferred and purchased, I have tried to remain alert to the policy implications of the behavior observed.

IMPLICATIONS FOR POLICY

Anticipated shortages of properly trained college teachers can be reduced by three means: attract more young people to the profession, retain persons once committed, and encourage an "optimal" distribution of the scarce manpower that is available. In order to maximize the numbers attracted and retained and to maximize the utilization of a fixed supply, effective methods of placing college teachers are essential.

Economic theory indicates that for a free labor market (e.g., a labor market for college professors) to function effectively: (1) the highest bidder for labor services should be the employer most in need of the services, (2) the persons possessing college teaching skills must be aware of the various advantages offered by jobs with all employers, and (3) the trained college teachers must move toward those opportunities that offer the greatest "net advantage." If the placing of college teachers is to be as meaningful as possible, this theoretical model must be related to the realities of professorial marketplaces. Specifically, four different problems must be studied. First, one must define what would be the optimal distribution of teachers if it could be achieved. Second, one must assess the current distribution in light of the ideal. Third, one must analyze why the actual and optimal distributions differ. And fourth, one must develop the techniques and procedures necessary to improve the methods of distribution so that the actual becomes more like the optimal.

One of the twin objectives of this study is to develop an understanding of the economic and institutional factors bearing upon the effective utilization of one of the most scarce species of professional workers, college professors, and, on the basis of this knowledge, to suggest measures for improvement. Answers to the following questions are sought:

(1) How do college teachers learn about jobs? What is the relative importance of the following means of bringing together employer and employee: formal employment services of various types, tips from friends and former graduate instructors, want ads in newspapers and professional journals, unannounced letters to possible employers and chance? Are there significant differences in the ways different persons locate jobs by geographic region, years of experience, type of hiring school, prestige of hiring school, scholarly doctrine, extent of education, prestige of educating school, or demographic characteristics?

(2) What formal procedures have been developed to facilitate college teacher placement? Who offers formal placement services? How are these agencies organized and administered? What are their budget and personnel requirements? How do they solicit and publicize "jobs wanted" and"positions-available?" What techniques are used for matching, referring, filling? Are there certain groups of professors that are dissatisfied with existing placement procedures? How can the services and techniques of the present agencies be improved? What would be the "ideal placement service"? How could the practical problems that would be encountered in developing this ideal be overcome?

(3) Why do college teachers choose particular jobs? How important are salary differentials and other factors in job choice? What roles do friends, climate, work load, physical and research facilities, rank and administration play in the job switch and job choice decisions? How do the factors that cause professors to leave one job differ from those that attract them to another? How do the factors that attract professors to first jobs differ from the factors that draw them to second and third jobs? Are there significant differences in why professors choose jobs by geographic region, years of experience, types of experience, types of hiring school, scholarly doctrine, extent of education, prestige of educating school, or demographic characteristics?

IMPLICATIONS FOR THEORY

The role of the market. In a competitive economy a market is the mechanism which allocates the available supply of goods and services among the various demands. There are two basic types of markets, one for outputs and one for inputs. The output market distributes final goods and services to consumers. The scarcest commodities will go to those who bid the highest for them. The input markets allocate the factors of production among the various producers, again in response to the highest bid.

The labor market, an input market, functions to distribute workers' services. Essentially labor is homogeneous, but perfect substitutability, knowledge and mobility are realized only in the minds and models of economists. In the real world there is not one ideal labor market, but many markets. In each of these markets the supply is the quantity of labor willing to work at various wage rates and is usually considered to be dependent on some disutility function. The natural reluctance toward laboring is overcome by the utility of the goods that wages will buy. The demand for labor services is derived from consumer preferences and the production function and is expressed by the marginal revenue product function. Abiding by the profit maximization principle, demanders will hire to the point where marginal revenue product equals the wage.[1]

Although many labor markets exist, it is still meaningful to speak of "the labor market"--not as a physical union, but as a conceptual linking of the individual markets, accomplished by virtue of labor's essential homogeneity and willingness to move in response to wage differentials. Thus if there is excess demand in any market, the marginal revenue product will exceed the workers' marginal disutility and theoretically supply should be induced into this market, until the demand is satisfied. The optimal allocation is achieved when the existing wage structure induces no further movement. Here the "profit" maximization criterion is fulfilled for each market. Since labor demand is a derived demand, given certain other conditions, fulfillment of this competitive principle should also represent welfare maximization.

The Academic Labor Market. Any labor market is an allocative mechanism and is a useful concept worthy of study in order to perfect the distributive process. The academic labor market is one such market. This market brings together the supply of labor resource qualified for college level teaching with the demand for these services. The supply need not be restricted to current college faculty, but can and does include potential teachers presently in either non-collegiate employment, or graduate school. The services of these factors include not only teaching, but also research and administrative ability. The market is thus not restricted to the demands of educational institutions alone, but extends beyond the academic community to encompass the demands of business, government and administrative fields.

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[1] The profit maximization as defined above does not hold for a monopsonistic situation in the labor market.

The academic labor market is thus a subset of "the labor market" but in turn is "the labor market" relative to many sub-markets established along lines of academic discipline, geography and personal characteristics.

Importance. This labor market is important because it is allocating the resource of qualified manpower, which is not only scarce, but is vital to the social production function.[2] If optimal allocation of this supply will increase the state of knowledge, improve the educational system, enhance the quality of the supply itself, and perhaps increase the supply, strides will have been made toward solving other problems.[3]

Unskilled workers can no doubt be optimally located in many different spatial and functional positions. Inoptimal allocation of one or a few of these workers will not greatly affect the final output. In the academic world, the elasticity of factor substitution is much lower. Almost each individual professor is a scarce resource whose optimal placement is severely restricted, and whose marginal product would be conspicuous by its absence.

The academic market is representative of an entire specie of professional white collar labor markets, of which little is currently known. These markets differ from the markets for blue collar production workers, not only in the quality of the resource but also in the functioning of the markets. Other markets operate on a sub-macro, or micro, level. Professional markets are super-micro, for individual "higgling" actually occurs. This study of the academic labor market will have relevance for a more general wage theory.

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[2] For statements of the importance of education in the social production function see, for example, Harold M. Groves in National Education Association, Education and Economic Growth (Washington: NEA, 1961) and Theodore W. Schultz, "Investment in Human Capital," American Economic Review, Vol. 51, No. 1 (March, 1961), pp. 1-16.

[3] Edward Denison has demonstrated that increased education increased the quantity of labor input, and increased knowledge increased the output per unit of input. The Sources of Economic Growth in the U. S. (New York: The Committee for Economic Development, 1962).

The university as an economic concept. Although a university does not adhere to the revenue-minus-cost maximization principle, it nevertheless can be considered a "firm." It is akin to a corporation in a growth industry. It exists to fulfill the demands of the consumer for its final product of educational services. In response to competitive demands, the firm must conserve and transmit accumulated knowledge, add to the body of knowledge, and evaluate the reliability and significance of knowledge. The firm must supply college educations to undergraduates, teachers to the nation's schools, refresher institutes on specialized topics to persons too old to attend college full-time, consultation services to government and business, a program in the performing arts to the public, and so forth. Institutions of higher learning are multi-product firms.

On the demand side, each university has some monopoly power, for it can discriminate according to criteria other than purchasing power in disposing of its product. On the supply side, limited resources such as classroom space and library facilities establish short-run parameters for the firm's production function. With these fixed resources, the variable resources, mostly labor, must be used so as to maximize the total output of the two main products--teaching and research.

In operating, the firm faces its resource markets for capital and labor. One such market is that for secretaries. Here the firm faces a resource whose price is given by the market, and will thus hire secretaries until the price equals the marginal revenue product.

A more pertinent market is that for college faculty. These people are the firm's primary production workers. This factor price is not precisely given by the market but is determined individually. Though possible equilibria will be limited by what is envisioned as a marginal product of that factor, there may even be economies of scale involved in this firm's production. The use of television may increase the professor's teaching product, and data processing machines will certainly increase his research productivity. In this resource market for faculty there are imperfections and in certain areas oligopsonistic practices exist. Although all of the various markets faced by a university will be considered in this study, primary emphasis is placed upon the market for college faculty.

Theory of academic labor markets. Like other markets the market for college faculty allocates resources. The first distribution of labor is between academic and non-academic employment. Within the academic environment, if inter-disciplinary salary differentials arise, undergraduates choosing careers will be induced to enter the higher paying fields, increasing the supply so as to eliminate the excess demand in that field. If geographical discrepancies between demand and supply occur, salary differentials can be a means of correcting the imbalance.

Like other markets it is imperfect. Theory predicts that the school which offers the highest salary will benefit most from the services of the professor being considered. This should reflect society's preferences, with the consequences that the professor is contributing most to the general welfare if employed at this highest paying school.

In fact there need be no correlation between social benefits and salary. The school with the greatest ability to purchase the professor's services may be maximizing prestige. The professor will be given very few classes. His teaching product will be small, whereas that of his research will be greater. However, his social marginal teaching product may be greater than his social marginal research product, and further his greatest social product may be at a school where he would have a heavier teaching load. Those schools with the greatest purchasing power are likely to be prestigious already and will have to offer less of a salary differential than would normally be expected. The individual will be attracted by the prospect of living in the company of the great scholars. This professor is thus taken from the schools which can best use his teaching ability, and he is possibly misallocated with regards to his social research productivity.

Questions to be answered. Specifically, concentration is centered upon three groups of theoretically relevant questions:

(1) *What are the sources of imperfection in academic labor markets?* To what extent is labor homogeneous and substitutable? How free are the flows of information among markets? Do individual employers and employees act in economically rational ways? How conscious is decision-making? Is there one academic labor market, or are there many divided markets? If the markets are divided, in what ways do they differ and what are the determinants of these differences?

(2) *What are the shapes of the demand and supply functions?* Is the quantity demanded of labor an inverse function of price? To what extent is hiring constrained by the heterogeneity of functional requirements? Is the demand for labor affected by largely non-economic factors such as a preference not to hire women? To what extent is supply influenced by economic considerations? How much is the availability of supply determined by the matching resources that a given institution of higher education can supply its faculty? How substitutable are capital and labor in the higher education production function?

(3) *How is the theory of blue collar labor markets applicable to professional markets?* Where the theory is not applicable, what extensions can be proposed?

METHODOLOGY

The publishing of this study represents the climax of a number of events. Recognizing the need for additional information about non-blue collar markets, starting in the Spring of 1962 I made a systematic review of the theoretical and empirical literature in labor economics relating to mobility, the market mechanism, and wage and employment equilibria. During the Summer the literature directly pertinent to institutions of higher education (IHE's) in the related fields of sociology, psychology, and education was surveyed.

In the Fall of 1962, under the sponsorship of the University Research Council and the Business Foundation of the University of North Carolina, two months were spent visiting eighteen Southeastern universities and gleaning the thoughts and experiences of over 100 social scientists who had recently moved to their new jobs and the men, mostly department chairmen, who had employed them. From the reading and the interviews a number of hypotheses were framed and then tested against the experience of those whom I had interviewed. In all ways, except geographic and disciplinary inclusiveness, this effort was a full-scale pilot study.

The next year, 1963, was devoted to developing the current study and analyzing the results of the pilot project as presented in The Market for College Teachers: An Economic Analysis of Career Patterns Among Southeastern Social Scientists (Chapel Hill, N. C.: University of North Carolina Press, 1965).

The twelve months of 1964 were spent resurveying the literature, framing hypotheses, and designing the questionnaires that would eventually be sent to over one-third of all college and junior college teachers newly appointed in 1964-65. During this stage a solid month was spent in conversation with over 80 persons concerned with many different phases of the utilization of professorial manpower.[4] In all, excluding persons contacted at conventions, over 170 different individuals contributed suggestions for hypotheses and criticisms of the questionnaire. Finally, a pretest version of the questionnaire was drafted and sent to 300 newly appointed teachers at twenty randomly selected IHE's. Their answers were analyzed and appropriate changes were made.[5]

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[4] Some idea of the diversity of the consultants is offered by mentioning some of their employers: The American Council on Education, American Association of Junior Colleges, American Association of Colleges for Teacher Education, National Education Association, Association for Higher Education, American Association of University Women, Association for School, College and University Staffing, National Association of Teachers' Agencies, American Association of University Professors, and the National Science Foundation. At least one hour was spent with each of 16 different individuals within the U. S. Office of Education, mostly within the Division of Higher Education. More individuals were consulted within the U. S. Department of Labor, including persons from the Bureau of Labor Statistics, the Bureau of Employment Security, as well as the Office of Manpower, Automation and Training. Papers were presented at the conventions of the Southern Economics Association, the National Association of Teachers' Agencies, and the Association for School, College and University Staffing which produced valuable reactions, many of which were incorporated into the research design.

During the same period a second questionnaire was framed and sent to all heads of 2-year and 4-year institutions of higher education (1891 of them) as listed in Part 3 of the 1963-64 Education Directory.[6] These college presidents were asked to list all full-time faculty newly appointed in 1963-64 (mostly for the academic year 1964-65), excluding faculty in schools of medicine, law, theology, dentistry, nursing, and pharmacy. As indicated in Table 1 of the methodological appendix, over 95% of the heads of 4-year IHE's returned completed forms and there is no biasing pattern to the non-response.[7] The institutions not responding are randomly distributed according to control, location, and type.

In early 1965 printed questionnaires were mailed to 10,312 of the 28,700 persons listed by the heads of institutions.[8] This sample intentionally excluded not only part-time faculty and not only doctors, lawyers, pharmacists, nurses, and theologians but also faculty who are--(1) teaching at their graduate school while working on a degree, (2) on active military duty, (3) unsalaried members of a religious order, and (4) not teaching any degree-credit hours.[9] After three follow-ups spanning a three month period, 71.7% (or 74.1%) returned useable questionnaires--an excellent response in light of the fact that completing the six-page form takes about an hour.[10] The respondents were, in general, representative of the sample. There are no significant differences in the percentage response between individuals in public versus private IHE's or between professors in institutions of various sizes. The response rate from individuals in the North Atlantic region was slightly below that for other regions but, when an adjustment is made for the fact that a greater percentage of the college presidents in the North Atlantic supplied names, the difference in response rates is not significant. Though college professors (73.1%) responded at a significantly higher rate than university professors (69.4%), the difference is not large, as with individuals at high prestige (65.2%) versus low prestige (72.2%) IHE's.

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[5] A copy of the questionnaire is included in the appendix.

[6] Reasoning that they are more trade schools than colleges, self-contained schools of optometry, art institutes, commerce schools, and other special schools were not contacted. These schools are mostly classified as "V" or "other" in the Education Directory.

[7] Ninety-two percent of the heads of two-year institutions responded. The statistics cited in the remainder of this section, indeed the remainder of the report except where otherwise stated, relate only to four-year institutions.

[8] The 10,312 excludes those persons later found to have been listed incorrectly (e.g., part-time faculty), as explained in a subsequent footnote. The method used to select the 10,312 is explained in the methodological appendix. The 28,700 includes an estimate of the number of persons who would have been named by the presidents who did not respond. The estimate is made from information on the enrollments in non-responding schools as a portion of total student enrollment and is based on the assumption that the student-faculty ratios are the same in the responding versus the non-responding groups of schools.

Overall, the questionnaires returned are quite representative of newly appointed college teachers in all disciplines (excluding some professional schools mentioned above), in all regions of the country, in all types of schools (although much of the subsequent analysis excludes junior college teachers), at all ranks, at all different sized IHE's, and at IHE's of wide-ranging prestige and quality.

While the questionnaires were being returned, over 500 written hypotheses were framed for testing. Tables were designed and computer instructions were drawn up. During the late Spring of 1965 the tables were made and the writing, which continued through the Summer, began.

During the Fall of 1964, while I was on leave from the University of North Carolina, I visited the offices of 15 organizations involved in placing college teachers.[11] and spent a full day interviewing the directors about their operations.

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9. Questionnaires were mailed to many of these people who, by answering only the first eight questions, identified themselves as being incorrectly in the sample.

[10] The 71.7% is actually an understatement of the response rate. Persons who returned questionnaires and indicated that they were improperly in the sample were not included in either the numerator or the denominator. If these persons are included, the response rate is 73.9%. The figures are: questionnaires sent--11,154; returned--8438; returned by persons improperly in sample--842. 71.7% = (8238 - 842) ÷ (11154 - 842). 73.9% = 8238 ÷ 11154. The rate is 74.1% of those that should have been in the sample if one assumes that the proportion incorrectly in sample is the same for the non-response as for the response.

[11] Teacher Placement Offices at the University of Illinois, the College Placement Office at the University of Michigan,

On the basis of these interviews I wrote descriptions of each placement operation. These descriptions were returned to the directors for their editing and appear as a major portion of Volume One. Also included in Volume One are the products of correspondence with another 25 of the organizations more active in the placement of college teachers.

Although this volume is the climax of a series of studies of the academic labor market, it is not intended to be the last of them. Two other studies are in process. The first is a special report on Academic Scientists that has been promised to the National Science Foundation in November, 1965. The second is a special study of two-year college staffing, scheduled for completion in September, 1966.

ORGANIZATION OF THIS VOLUME

This volume is divided into five distinct sections. In the first part, Chapters 2 through 6, a discussion of general behavior in academic labor markets is presented. Here topics such as mobility, turnover, and the balance of supply and demand are covered. Chapters 7 through 13 seek to identify the boundaries of submarkets within the total academic labor market. The importance of balkanizations by discipline, region, quality of the IHE's, religion, sex, education, and type of employer is discussed. The market mechanism, and channels of communication are discussed in Chapters 14 through 18. The fourth section considers the reasons why professors choose certain jobs. And in the remaining chapters implications for the nation, the individual, the employer, and the body of economic theory are contemplated.

Office of Academic Placement at Columbia University. Also included are the New York City Professional Placement Office of the New York State Bureau of Employment Security, American Nurses' Association, American Chemical Society, American College Bureau, College and Specialist Bureau, Southern Baptist Convention, Board of Education of the Methodist Church, Convention Placement Service Headquarters at the U.S.E.S., Department of English at the University of North Carolina, Department of History at the University of Wisconsin, Cooperative Bureau for Teachers, and the American Association of University Women.

ACADEMIC TURNOVER ... CHAPTER 2

The market for personnel of college teaching caliber and training is populated by widely variegated sellers and a curious conglomerate of many buyers. Persons holding advanced degrees, the usual qualification for college teaching, have developed mental facilities which make them useful in the production of many types of commodities. Private enterprise seeks them to discover new and better products, to analyze the best methods of marketing them, and to apply linear programming techniques to distribution and inventory control. The larger business firms also hire trained political scientists to write speeches, psychologists to analyze plant conditions, economists to make projections about the future state of the economy, humanists to bring "culture" to their top executives. Governments require trained minds to structure data gathering, to plan area development or redevelopment, to evaluate research proposals, to frame tax cuts, to judge the safety of new drugs, and to pursue innumerable other vital roles.

One of the results of the increasing demand for trained mind power is brought out by a group of Berkeley professors. They observe that one of the causes of recent student discontent is the lack of adequate faculty attention to the students as new and growing demands for highly trained manpower vie for this scarce talent.[1] As universities bid, one against another, for the limited manpower, faculty members are pushed and pulled between jobs so that they have little opportunity to develop institutional loyalties. John W. Nason, president of Carleton College, captures the flavor and results of rapid turnover and a new alignment of loyalties that in turn facilitate faculty mobility:

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[1] "It is true that the role of the professor in society has become enormously enlarged, and that the university is no longer the only force influencing him. The increase of knowledge has forced on him a new degree of specialization. He has a new role in government and a new value to industry. The universities

> "What disturbs me, is that with colleges, universities, government and industry all competing for the services of faculty, there has developed a pattern of relatively rapid turnover... with the result that one's personal loyalty centers on one's profession, not on the college, which becomes a way station on the road to professional success. Faculty members are less inclined to identify themselves with their present institution. After all, it is only human nature and common sense not to become too involved in a community in which one is only a transient rather than a permanent member."[2]

It is the intent of this chapter and the next, to investigate the extent of mobility, analyze its character, and evaluate its effects upon the academic community and society at large. In this chapter, emphasis is placed upon the mobility-influencing factors on the demand side, primarily the characteristics of the demanders (e.g., type, region, size, control). In the next chapter, the effect upon mobility of variations in the characteristics of supply are considered.

THE DEMANDERS

Though colleges and universities are the only producers of persons with advanced degrees, they are not the only users of their products. A substantial percentage of newly trained graduate student personnel are produced for self-consumption, but the majority enter careers in business, government, and primary and secondary education.

The National Science Foundation maintains a manpower registry, in cooperation with the professional associations in the scientific disciplines. Listed with the registry are virtually all persons working as professional scientists, 215,000 in all. Of this group, only 19% are employed by educational institutions, excluding primary and secondary school teachers. Government employs 20% and the largest employer type, business, accounts for 42%.[3] Institutions of higher education are only the third most important employer of trained scientists.

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themselves are increasingly competing for his services. He can pick and choose, indeed, among careers and roles." As quoted in "Cal Professors Turn Up Flaws," The Wall Street Journal, June 3, 1965, p. 10.

2. As quoted in "Faculty: Transient Loyalty," Time, October 23, 1964, p. 70.

3. National Science Foundation, American Science Manpower 1962: A Report of the National Register of Scientific and

Institutions of higher education are a more dominant force in markets for non-scientists. Although general statistics are not available on the stock in non-scientific disciplines, the National Education Association regularly publishes data on the flow. In 1961-63, 46.7% of all new doctorates entered college teaching. Only 38.1% were known to move to non-education jobs, and 11.1% became teachers at the primary and secondary levels. Almost without exception, the doctorates from scientific fields were more likely to accept employment outside higher education than either the doctorates in the humanities or in the social sciences. For example, in English, history, foreign languages, and philosophy over 80% of those receiving doctorates accepted appointments at colleges and universities, compared to 40% and less in the biological sciences, psychology, physics, geology, and chemistry.[4] Weighted averages computed from the N. E. A. data show that 31% of natural scientists, 66% of social scientists, and 70% of the humanities doctorates enter college teaching.

When the definition of graduate-trained personnel is broadened from "doctorates only" to include master's degree holders as well, non-academic employers are seen as a greater force in the market. The major employers of holders of master's degrees are primary and secondary educational institutions, since 45% of all second-level degrees are in education. Another 16% of all master's degrees granted are in the applied disciplines of engineering and business administration, so that even if all of those receiving master's degrees in the traditional "academic" disciplines were to enter college teaching, they would represent only 40% of all degree receipients.[5] In fact, there is reason to believe that a smaller percentage of master's degree holders than of holders of the doctor's degree enter college teaching, for the doctorate is more important in academic employment. This reasoning is confirmed by an analysis of academic and non-academic scientists according to the highest degree received. Of those employed by educational institutions, 52% hold Ph.D.'s, but only 23% of the scientists employed outside academia are so qualified.[6]

Technical Personnel (Washington, D. C.: G. P. O., 1964), p. 21.

[4] National Education Association, Research Division, Teacher Supply and Demand in Universities, Colleges, and Junior Colleges, 1961-62 and 1962-63 ("Higher Education Series: Research Report 1963-R3"; Washington, D. C.: N. E. A., 1963), p. 53.

[5] U. S. O. E., Earned Degrees Conferred, 1959-1960: Bachelor's and Higher Degrees ("OE-54013-60, Circular No. 687"; Washington, D. C.: G. P. O., 1962), p. 5.

[6] National Science Foundation, American Science Manpower, 1962: A Report of the National Register of Scientific and

The market for graduate-trained personnel extends beyond the confines of academic institutions and into the world of business and government. Therefore, a full discussion of the market for college faculty should rightfully include an examination of all types of employers of persons who might be qualified to teach at the college level. But a market may be defined in terms of the characteristics of the demanders, instead of the suppliers. There is a market for graduate-trained personnel, but there is also a market for college teachers. The two are not coincidental. As a practical solution to a problem of semantics, herein the term, "the academic labor market," applies to something less than all types of jobs which graduate trained personnel may, and often do, fill. Specifically, "the academic labor market" refers to "the market for college teachers," excluding all non-collegiate employers arbitrarily. Since we are most directly concerned with the welfare of the system of higher education, this more limiting and narrower definition seems justified.

Even this narrow definition of the market includes 1,282 employers (four year institutions of higher learning) and 222,850 faculty, 160,000 of them full-time.[7] Rapid expansion in the demand for the output of our colleges and universities (i.e., college graduates and research), brought about by the rapid growth of our population and the ever growing awareness of the importance of higher education for individual advancement and the growth of our nation's economy, has increased the demand for the inputs and, in lieu of a relatively stable supply, largely created a shortage of college faculty. The expansion of the non-academic demanders of graduate-trained personnel has added to the shortage, as the importance of specialized technical knowledge has become increasingly evident.This double-barrelled assault upon a relatively fixed supply has caused a sky-rocketing of excess demand.

Colleges and universities have found the traditional sources--the unemployed, the non-participating, and the discontented[8]--to be inadequate to their needs. It has been necessary for the individual demander to "steal" another's supply by approaching "known-to-be-content" professors with too-tempting offers. For the academic year 1964-65, collegiate

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Technical Personnel (Washington, D. C.: G. P. O., 1964), p. 14.

[7] National Education Association, Research Division, Salaries Paid and Salary Practices in Universities, Colleges, and Junior Colleges, 1963-64 ("Higher Education Series: Research Report 1964-R3"; Washington, D.C.: N.E.A., 1964), p. 6. Corrections are made for schools not reporting

[8] Lloyd G. Reynolds, The Structure of Labor Markets (New York: Harper and Brothers, 1951), pp. 101-102.

employers filled slightly more than one-fourth of their positions by such raids. Of course, once the raiding has started it leads to counter-raiding and a flurry of mobility. After the game has ended, total supply is the same but the distribution differs so that some institutions may gain, but others certainly lose.

Though non-raiding pacts have evolved, they are usually between institutions of generic similarities, such as from the same region or sponsored by the same denomination, and they are frustrated in their effectiveness by the wide geographic range of college professor mobility and the lack of commitment by professors to particular types of institutions.

Some mobility is good, and it should not be implied otherwise. In a dynamic economy where some sectors shrink and others grow, labor must follow the newer demands to the needed areas. When consumers' tastes change to increase the desires for college educations, resources must flow to the collegiate industry if marginal social costs and marginal social benefits are to be moved toward equality.[9] Mobility should occur, although it can be excessive.

A general indication of the extent of mobility viewed from the employers' side is given by the accession rate, "the number of newly hired faculty" divided by "the total faculty in the preceding year." This statistic is typically larger than the more traditional "turnover rate," for it includes not only the new hiring necessitated by replacement of personnel who leave the market and those who shift to other academic institutions, but also the hiring for newly created positions resulting from expansion. Since it is the number of jobs taken, not the number of quits and layoffs, that most directly concerns both demanders and suppliers in academic labor markets, the more inclusive measure is most relevant for this study.

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[9] One of the more concise treatments of the theory behind this statement is provided by Harry S. Mills and Royal E. Montgomery, _Labor's Progress and Some Basic Labor Problems_ (New York: McGraw-Hill Book Company, Inc., 1938), p. 119. "The assumption that capital and labor are mobile is, of course, basic. Occupational and place mobility are patently essential if labor is to be paid in rough accordance with its marginal value productivity, and the same is true for capital. Unless labor is able to transfer itself from industry to industry, and from place to place, the curtailment of supply in those industries or places where employers are paying less than marginal productivity which is supposed to bring labor remuneration up to its 'natural' (i.e., marginal value productivity) level is non-operative. The assumption that employers will substitute one factor for another in accordance with the dictates of cost considerations presupposes the mobility of the factors enabling him to do this...."

THE EXTENT OF MOVEMENT

Based upon survey data, the flows into the market, and those out of and within, are estimated in the diagram below. The estimates are for full-time faculty only and exclude lawyers, M. D.'s, and theologians. Of the 160,000 teachers in higher education in 1963-64, 154,800 remained--145,700 of them continuing at their old jobs and 9,100 switching to another institution of higher education. But 5,200 left college teaching--850 of them to employment outside academia, 650 to academic administration, and 3,700 left the labor force. The laborforce leavers include deaths, retirements, and returns to graduate school. Supplementing the 154,800 professors continuing from 1963-64 were 13,100 new entrants to the laborforce (mostly emerging graduate students), 2,900 primary and secondary school teachers, 3,000 former employees of non-academic enterprises, and 400 ex-college administrators. After accounting for both the gains and losses between the two academic years, the total teaching force increased by 14,200 to 174,200.[10] The extensive interchange between various types of demanders of graduate trained personnel is obvious, as is the great amount of movement.

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[10] These figures were obtained by multiplying the percentage distribution of our "balanced" sample by 28,500 (the total number of job accessions in 1964-65). The total number of newly appointed faculty members, 33,300, was computed from information supplied by college presidents. We received 31,181 names from the college presidents who responded. The names are those of college teachers newly appointed to accredited schools, except those in the areas of medicine, law, and theology. The responding presidents represented 93.7% of all students enrolled in all the 2-year and 4-year colleges and universities listed in the 1963-64 Education Directory, after certain minor exclusions are made for special and technical institutes. Assuming that the same presidents represent the same portion of total faculty, the original number of names was multiplied by 100.0/93.7 to obtain 33,300. The 28,500 was obtained by eliminating those persons newly appointed to two-year IHE's.

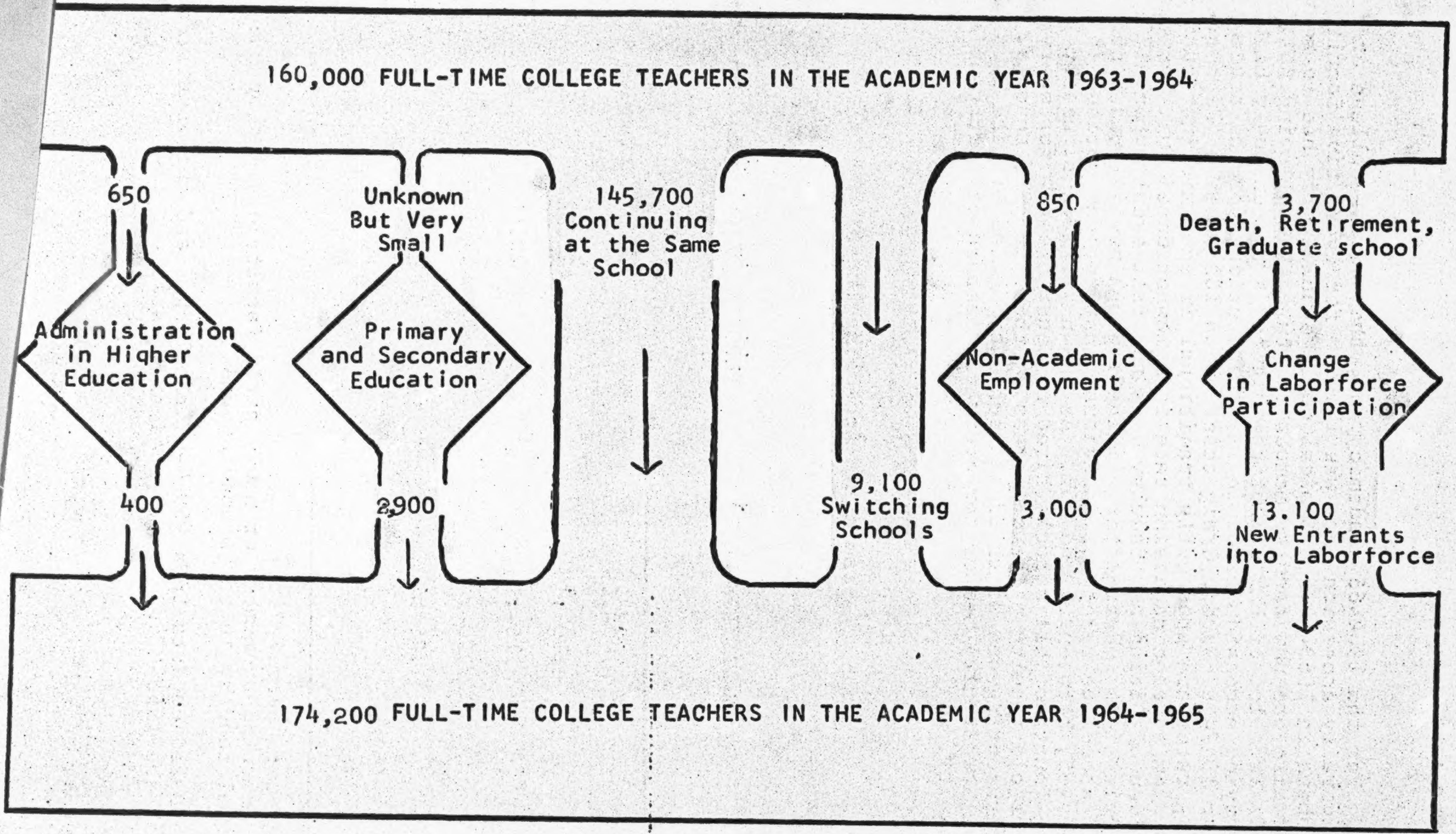
160,000 FULL-TIME COLLEGE TEACHERS IN THE ACADEMIC YEAR 1963-1964
650
Administration in Higher Education
400
Unknown But Very Small
Primary and Secondary Education
2,900
145,700 Continuing at the Same School
9,100 Switching Schools
850
Non-Academic Employment
3,000
3,700 Death, Retirement, Graduate school
Change in Laborforce Participation
13.100 New Entrants into Laborforce
174,200 FULL-TIME COLLEGE TEACHERS IN THE ACADEMIC YEAR 1964-1965

Diagram 1. Flow in the Academic Labor Market.

For the 1964-65 academic year, the average college and university accession rate was 17.9%: for every five faculty members in 1963-64 the typical college-university had to recruit and hire one new faculty member to start the following fall. This is a lot of hiring but the figure is not uniquely high. Studying accession rates in 117 institutions for the academic year 1927-28, Hardin Craig observed an 18% rate.[11] High accession rates are apparently traditional in academic institutions.

An average accession rate is somewhat deceiving, for the burden of hiring new faculty does not fall evenly upon all institutions. Even after eliminating the newly founded schools, the accession rates for individual institutions varied, in 1964-65, between 0% and 80%. As shown in Table 1, nearly one-fourth of all schools hired at least one new for every four old faculty members whereas another group of schools, representing one-sixth of all schools, needed to hire less than one new faculty member for every ten members of last year's faculty.

Table 1. Accession Rates

ACCESSION RATE*	PERCENT OF ALL COLLEGES AND UNIVERSITIES**
.00-.09	15.5%
.10-.14	21.9%
.15-.19	20.8%
.20-.24	17.1%
.25 and over	24.6%
TOTAL	99.9%

Source: Survey data.
*/Computed as number of newly hired faculty divided by the total faculty in the preceding year.

**/Based on data from 939 4-year colleges and universities, for the 1963-4 and 1964-5 academic years.

Logan Wilson observed that "on the whole, the more mediocre the university, the higher the annual turnover of staff."[12] Our data confirm Wilson's observation and are in accord with the a priori expectations of economic theory. In markets where knowledge is imperfect, mismoves are frequent. Personnel migrate to both good and poor institutions without a full understanding of what to expect. The dichotomy arises not at the point of attraction but of retention. A few months on a job give an individual an opportunity to assess the value of his job. Those persons who have come to good jobs will choose to remain, but the persons in poor jobs will seek others. The institutions with better jobs will, therefore, have relatively low turnover rates, whereas the poor institutions must yearly attract new and unsuspecting candidates to replace the discontented.

Identifying the institutions which offer good jobs and those which offer bad ones is not an easy task, for each supplier has his own subjective evaluation of the net advantage of particular jobs and each demander varies the amount of salary and other compensations according to what the traffic will bear. Because individuals will give different relative weights to the various factors involved when offered identical jobs and because two individuals are unlikely to be offered identical jobs even by the same institution, it is unlikely that two individuals will give the same score to any one institution. However, by assuming that the better institutions offer identical men better jobs and that our prestige index identifies the better institutions, the good may be separated from the bad. When this is done, the institutions offering higher net attractiveness should, and do, have lower accession rates.

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11. Hardin Craig, "Method of Appointment and Promotion in American Colleges and Universities," Bulletin of the American Association of University Professors, Vol. XV (March, 1929), pp. 175-217.

12. Logan Wilson, The Academic Man (New York: Oxford University Press, 1962), p. 59.

Table 2. Accession Rates by Quality of School

QUALITY OF SCHOOL*	AVERAGE ACCESSION RATE **
Top 20%	14.7%
20%-40%	17.5%
40%-60%	17.1%
60%-80%	19.0%
Bottom 20%	19.9%

Source: Survey data.
*/Institutions are rated by the Prestige Index explained in the appendix and Chapter 11.
**/For method of computation, see Table 1.

As shown in Table 2, the highest rated schools experience only 14.7% accession, compared to 19.9% for the poorest schools.[13] To cite additional data not included in the table, very high accession rates are common for the poorer schools, where a majority of the rates exceed 20%. Accession rates in excess of 20% are experienced by only one-fifth of the schools offering the best jobs. Academic employers apparently do have the real option of offering attractive jobs and thereby reducing their quit rates and, on the other hand, combining poor jobs with great hiring effort.

TYPES OF DEMAND

Since accession rates reflect a school's ability not only to attract and retain but also to encompass the hiring of personnel to occupy newly created positions, it is desirable to break down the crude rate into several components. Defined by the nature of the need, the components are: temporary demand, shift demand, replacement demand, and expansion demand. In the case of temporary demand, the need is for an individual to fill a position normally held by a man who is on leave for one year and who expects to return to his former position. Shift demand is created by the need to replace a professor who has moved to another institution of higher learning. Accessions that must be made to fill the positions of professors who have retired or died or left the laborforce by another means are replacement demands. And expansion demand is that caused by the need to fill entirely new teaching positions. Replacement and expansion demands, and to a lesser extent temporary demands, necessitate the recruitment of new college teachers from outside the current members of the profession, whereas shift demands do not, in the aggregate, alter the excess demand for college teachers.

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[13] In interpreting these data, the exclusion of persons teaching at the same institition where they are studying toward a degree must be kept in mind.

To determine why vacancies occur, we asked those who changed jobs to indicate what the person who held their current job before them was doing this year. Undoubtedly some had difficulty identifying their predecessors. This accounts for the fact that 9% did not answer the question, as shown in Table 3. Most did reply, however, and their replies are most interesting.

Table 3. Reasons for Vacancies

TYPE OF DEMAND		PERCENT OF TOTAL DEMAND
Expansion Demand		43%
Replacement Demand (Total)		18%
Death	1.5%	
Retirement	5.1%	
Move to Administration	2.2%	
Return to Studenting	6.3%	
Move to Business	1.8%	
Move to Government	1.0%	
Shift Demand		23%
Temporary Demand		7%
Unknown		9%
All Demands		100%

Source: Survey data.

In this era of rapid expansion of our educational system, the largest number of vacancies are in positions that did not exist in the previous year, newly created positons that represent a net expansion in the numbers of college faculty. Twenty-three percent of the movers are called to their current appointments because their predecessors have accepted employment at another institution of higher education. Another 18% are filling positions left vacant by individuals who left the teaching force due to death, retirement, or a more attractive offer outside academia. And 7% are keeping shop while the permanent occupant of the position is taking his sabbatical, visiting at another institution, serving the government temporarily, or acting in some other short-term capacity with the expectation of returning to his position one year hence.

The predominance of expansion demand and the insignificance of death-caused vacancies reflect special market conditions unique to extended periods of expansion and excess demand. In many institutions, a majority of the faculty were not yet trained as college teachers as recently as the end of the Korean War. As a result, for the nation as a whole over two-thirds of all faculty are under 50 years old. This, combined with longer life expectancies, means that death-caused vacancies are few. The demographic picture was quite different when William Haggerty and George Works conducted their study of North Central Colleges in 1936-37. Though death-caused vacancies were fewer in number, they represented a considerably higher proportion of all vacancies, 7%. Expansion accounted for only 24% of all demand. Most of the vacancies, 58% resulted from resignations (replacement plus shift plus temporary demand as categorized here).[14] The academic labor market of today differs considerably from that of the pre-World War II era.

Today expansion and expansion demand make up the largest single force in the market. All types of institutions are expanding, at an average rate of 8.5% as shown by Table 4. The expansion is not, however, evenly concentrated throughout the system. The well established, higher quality schools evidence a reluctance to endanger their quality through too-rapid expansion. They are expanding, but not as rapidly as other schools. Taken together, the total faculty of the top-rated schools increased by 7.6% between the 1963-64 and 1964-65 academic years. A majority of the appointments made by these schools concern positions that did not exist in 1963-64. But even this rapid rate of expansion is insufficient to keep pace with the lesser institutions and to avoid the operation of a type of inverse Darwin's law. While the best institutions are expanding faculty by 7.6%, the poorest are growing by 9.2%, and the mediocre by 8.6%.

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[14] William J. Haggerty and George A. Works, "Faculties of Accredited Colleges and Universities," North Central Association Quarterly, Vol. 13 (January, 1939), pp. 309-407.

Table 4. Hiring Rates, by Selected Institutional Characteristics****

CHARACTERISTICS OF SCHOOLS	EXPANSION RATE*	REPLACEMENT RATE*	SHIFT RATE*	TEMPORARY RATE*	ACCESSION RATE**
All 4-year Institutions	8.5%	3.4%	4.4%	1.4%	17.7%
Size:					
Under 1000 students	6.8%	4.7%	5.9%	1.7%	19.1%
1000-5000 students	9.1%	4.3%	4.9%	1.6%	19.9%
Over 5000 students	9.2%	2.4%	2.4%	1.1%	15.1%
Control:					
Public	11.2%	4.2%	5.1%	1.5%	22.0%
Private	7.3%	3.8%	4.7%	1.6%	17.4%
Quality:***					
Top 20%	7.6%	1.9%	4.0%	1.2%	14.7%
Middle 60%	8.6%	3.4%	4.5%	1.4%	17.9%
Bottom 20%	9.2%	4.8%	4.6%	1.3%	19.9%

Source: Survey data.

*/Expansion rate equals the number of faculty hired into newly created positions for Fall, 1964, divided by the total number of faculty in Spring, 1964. Replacement rate equals the number of faculty hired to replace persons who were teaching in the Spring, 1964, but had left college teaching altogether as of Fall, 1964 divided by the same denominator. Shift rate equals the number of faculty hired to replace persons who switched from one faculty to another between the 1963-64 and 1964-65 academic years divided by the same denominator. Temporary rate equals the number of faculty hired in the Fall of 1964 as temporary, one year, replacements for persons on leave and so forth divided by the same denominator.

**/The accession rate is the sum of columns one through four. It may be computed independently by dividing the total number of newly appointed faculty members as of the Fall, 1964, by the total number of faculty members as of Spring, 1964.

***/Institutions are rated according to the Prestige Index explained in the appendix.

****/The reason why 9% of the vacancies are available could not be determined. It was assumed that these 9% of all vacancies were evenly distributed over the four reasons cited.

The greatest expansion is in the large, publicly supported schools. The already large schools evidence a willingness to take on still more students and faculty whereas the small schools appear to be more conservative in their expansion plans. Part of the problem is financing. Most of the large schools are publicly supported and many of the smaller schools are closely controlled by a religious denomination. In recent years, when the emphasis upon scientific know-how and poverty elimination has been linked to education so that taxpayers are willing--even anxious--to see the public sector increase expenditures upon its institutions, the sources of financial support for privately endowed schools have not grown commensurately. Moreover, the public institutions have felt some responsibility for offering opportunities for an advanced education to all those who are eager and minimally capable, a responsibility not felt by the privately supported schools. The result is that over half of the faculty hirings by public schools represent expansion, compared to only 42% for the private schools. The faculty of publicly controlled colleges and universities are expanding 11.2% per year. For all private schools the comparable expansion rate is only 7.3%. When only the denominationally related private schools are considered, the difference in attitude toward expansion is even more obvious, for in these schools the expansion rate is only 6.0%.

The hiring problems of the small, mediocre schools are of an entirely different character than those of the large, prestigious schools. The poorer colleges must exert a tremendous effort simply to "keep even," to compensate for their high turnover rates. Each year, almost 5% of the faculty at the poorest schools leave college teaching--to return to graduate school, to enter a non-academic profession, to retire, or by death. Another 4.6% of these same faculties switch to other college teaching positions. And, still another 1.3% go on leave and must be replaced by a temporary appointment. In all, the poorest group of schools must replace 10.7% of their faculty each academic year. That is, slightly over one out of every ten faculty members as of Spring, 1963, had to be replaced for the following Fall. The better schools, on the other hand, evidence a much less severe replacement problem. They must replace only 7.1% of their faculty each year, or only one out of every fourteen. The need for replacement is over 50% higher in the poorer schools. Although the man joining the faculty at a high prestige schools has typically made more moves before getting there,[15] once in place he has a greater tendency to remain.[16]

Table 5. Importance of Expansion and "Replacement" Demands Compared by Institutional Size, Level, Control, and Quality

CHARACTERISTIC OF INSTITUTION		PERCENT OF ALL VACANCIES CREATED BY EXPANSION DEMAND
Size:	Over 5000 Students	61%[*s]
	Under 1000 Students	36%
Level:	University	52%[s]
	College	44%
Control:	Public	51%[s]
	Private	42%
Quality:	Top 20%	52%
	Bottom 20%	46%

Source: Survey data and Table 4.
*/The need to rehire for positions that have been filled in the past is 100% minus 61%. The 61% means that of all the hirings by large schools 61% were into newly created positions.
s/means that according to chi-square at the .05 level of significance, the differences in each of the matched pairs are significant.

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[15] Both the Lazarsfeld-Thielens and Stecklein-Eckert studies reveal that the faculty accepting positions at the better schools have, on the average, held a greater number of different jobs. Paul F. Lazarsfeld and Wagener Thielens, Jr., The Academic Mind (Glencoe, Ill.: The Free Press, 1958), p. 9 and John E. Stecklein and Ruth E. Eckert, An Exploratory Study of Factors Influencing Choice of College Teaching as a Career (Washington, D. C.: U. S. O. E., G. P. O., 1961), p. 18.

[16] Confirming evidence is presented in Table 4, Chapter 3.

Table 5 summarizes in another way the different nature of the hiring requirements of small, private colleges versus large, public universities. Here it is shown that 61% of all the hiring done by large schools is to fill positions that did not exist in the previous academic year. The figure contrasts sharply to that for small colleges where two-thirds of the hirings are for "replacement-shift-and-temporary" reasons. Similar contrasts are drawn by level, control and quality.

Because they do not know that they will have a vacancy until a resignation is tendered, the schools with large shift and replacement demands tend to enter the market later, and with a greater sense of immediate need, than the schools filling expansion demands.[17] Whereas 26% of the newly created positions are not filled before March 31, 43% of the vacancies created by faculty shift are still to be filled. On March 31st, 39% of the replacement demand and 41% of the temporary demand are unmet.[18] Whereas the large, public universities tend to dominate the market prior to March 31 as they hire into newly created positions, the main activity in the late Spring and Summer is by the smaller, private colleges which are scrambling to cover needs not known until late in the season.

Regardless of cause, turnover is disrupting to an institution. Faculty offices must be changed or built; orientation to administrative procedures must be pursued; often courses must be added and deleted; research facilities may need to be altered and expanded; students must adjust to different advisers, different course offerings, and different instructors. Especially faculty departures, but also additions, involve costs both to the institution and the individuals concerned.

But there are also benefits. To the institution, new faculty mean new ideas, new orientations, new courses, new vitality. The replacement of old staff with new allows for a fresh perspective and exposes students to several different professors. The new professor will bring a different background, a different set of experiences, and often a different bias to his classrooms--thus affording varied exposure. The turnover of faculty almost certainly prevents the development of mutual admiration societies of like-minded scholars who may have lost touch with the realities of their discipline. Since the academic tradition is hiring at the bottom and promoting from within, the turnover evidenced in this chapter means that, even at the top, there is some room for new people. And, accordingly, as the junior faculty move to the senior positions, there is room for the hiring of new junior men.

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17. For a more complete discussion of the different implications of expansion and replacement demand, see my The Market for College Teachers (Chapel Hill, N. C.: University of North Carolina Press, 1965), pp. 49-51.

It seems reasonable to question, however, if the extent and degree of mobility that many of the poorer institutions are experiencing is good for them. The schools in the bottom 20% by prestige are faced with the necessity of replacing one-fifth of their last year's faculty, a task that requires much time. This is a turnover rate that must endanger the continuity of both instruction and administration. In a market that is expanding as rapidly as the academic labor market is at this time, the large rates of replacement-and shift-caused turnover are probably more detrimental than beneficial to the institutions. The vitality and the fresh view offered by new faculty could be lent by 8% per year faculty expansion. Though the lack of the possibility of movement for veteran faculty would certainly be detrimental to all institutions--indeed to the entire academic community--most of the institutions, and especially those with high replacement and shift demands, would stand to benefit from a lessening of movement within the market.

This general conclusion must be modified by a distinction between voluntary and involuntary movement and generalized by a discussion of turnover from an individual's prospects, both tasks being undertaken in the next chapter.

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18. The differences between expansion demand and each of the other demands are significant at the .05 level, by chi-square.

THE
MOBILE
PROFESSORS ... CHAPTER 3

Supply, individual faculty selling their teaching and research services to collegiate employers, is emphasized in this chapter. To understand the markets, it is necessary to know who these suppliers are, where they were before they entered college teaching, and how they act. Knowledge of where the supply is profits the collegiate recruiter in his hunt for qualified staff. Also benefiting from this knowledge are faculty and prospective faculty, for, by knowing the extent and character of their competition, they may learn what terms to demand. Finally, if reasoned judgments are to be made about the adequacy of supply and the appropriateness of the direction and quantity of mobility, the extent of movement and its character as it exists in the current market must be known. For many reasons and from several prospectives, knowledge of supply is relevant to a thorough understanding of the market.

THE PROFESSORIAL LABORFORCE

A characterization of today's college teachers offers a reasonably accurate image of "the suppliers to academic labor markets," though this image is admittedly imperfect.

In 1962-1963, 1177 4-year colleges and universities[1] employed nearly 200,000 full-time faculty members.[2] Eighty-two percent of the faculty are male and one-third are over 50 years of age, according to a recent study by the Office of Education, subsequently referred to as the COLFACS Study.[3] Slightly over half of these faculty members have Ph.D. degrees, and approximately one out of every five is in a new job. The typical college teacher is advanced in rank, 55% being either an associate or a full professor. Though the number is fairly small, universities are the primary employers of faculty, employing nearly half of them.[4] The still expanding public sector employs 57% of all faculty. Concentrated in a few large disciplines such as mathematics, physical education, music, and history and otherwise spread among many smaller disciplinary specialties, approximately 27% of all professors are scientists, 30% social scientists, 26% in the humanities, and 17% are associated with professional schools such as law and medicine. Geographically, faculty locate more in the North Atlantic (29%) and Middle West (29%) than in the Southeast (19%) and the West-Southwest (22%).

Other pertinent characteristics of the stock of college teachers will become apparent throughout the chapter. It is good to remember, however, that the stock of college teachers is not the sole source of supply to the academic labor markets. Traditionally in economics, the employed represent only a portion of supply. Even after adjusting for the fact that many potential suppliers of teaching services are currently employed outside academia, total supply is something more than all persons employed. The employed are a "quantity hired" which at best includes all persons who offer their services under unique employment terms. Total "quantity supplied" includes others who might have worked under similar conditions if jobs were vacant. And total supply must, in one instance, include still others who would have taught if the terms were more favorable and, in another, exclude those who would not have taught if the conditions were less favorable. Total supply also includes the flow of new teachers into the market who have not yet landed jobs. Thus, although the above description of labor supply includes the major portion of labor supply and therefore represents a reasonably accurate description of the stock of labor services, it is not a total picture.

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[1] American Council on Education, American Universities and Colleges (Ninth ed.; Washington, D. C.: American Council on Education, 1964), p. 27.

[2] U. S. O. E., Digest of Education Statistics ("OE-10024-63; Bulletin 1963, No. 43," Washington, D. C.: G. P. O., 1963), p. 66.

[3] U. S. O. E., Preliminary Report on Teaching Faculty in Higher Education, 1962-63: Primary Teaching Areas and Contact Salaries ("Circular 733, OE-53022,"; Washington: GPO, 1964), by Ralph E. Dunham and Patricia S. Wright. The remaining statistics in this paragraph are from this source.

In this chapter, three distinct groups of suppliers of labor services are to be discussed in turn: presently employed college teachers, graduate students newly emerging into the market, and "loosely connected" personnel who would probably not be teaching if it had not been for the particular job offer they received.

CURRENT TEACHERS AS SUPPLY TO A PARTICULAR MARKET

The extent of mobility. It cannot be expected that all current teachers will be actively looking for a new job in the market in any one year. Some of the professorial laborforce will desire to remain in place. However, an amazingly large proportion of the college teaching force is, at any given time, both susceptible to propositions from new employers and actively seeking them.

As indicated by the diversity of social origins, the professorial laborforce is a culturally heterogeneous group. The American Association of University Professors reported in 1938 that a sample of 4,667 members[5] revealed the following social origins of professors, according to the occupational status of their fathers: businessmen, 26.6%; farmers, 24.7%; manual workers, 12.1%; clergymen, 10.6%; teachers, 5.1%; physicians, 5.1%; lawyers, 4.1%; professors, 3.9%; chemists and engineers, 3.0%; public officials, 1.9%; editors and writers, 1.2%; artists and musicians, 1.0%. Academicians are more of an intellectual than a social elite.

Professors are quite mobile, both potentially and actually. Even those who are content with their present jobs consider themselves potentially mobile, if the right job comes along; and employers are out in the market initiating contacts to convince the otherwise content that the right job has in fact come along. Of the faculty in the COLFACS study, 22% had served in their present positions for less than one year. Our correspondence with the presidents of both 4-year and 2-year colleges and universities suggests that for the academic year beginning in September 1964, nearly 33,500 new faculty appointments were made. To accept these appointments, the median professor had to move 450 miles. Twenty-six percent of the job switches between college teaching jobs involve moves exceeding 1,000 miles, whereas only 5% of the job changers are able to maintain the same residence.

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4. This number excludes junior college faculty.

5. B. W. Kunkel, "A Survey of College Teachers," Bulletin of the A.A.U.P., Vol. 24, 1938, p. 262.

By the time a man has reached the associate or full professor stage of his career, he has typically changed institutions at least three times.[6] Although few jobs are accepted for less than a full academic year due to the traditions of the profession, a significant number of professors apparently start looking for their next jobs before they have actually started to serve on a newly accepted one. Few consider their present jobs permanent. Among those serving on new jobs in 1964-65, 15% indicate that they do not expect to remain in this job beyond the end of the academic year, another 38% expect to stay less than four years. Only 17% consider their new jobs as permanent. Interviews with Southeastern social scientists revealed that 22% of the faculty who had been on their jobs for less than three years had reentered the market and were currently actively seeking another job and that virtually all (98%) of the interviewed professors wanted to remain on the fringes of the active market by being kept posted of employment opportunities for which they might qualify.[7] Marshall found that 22% of the economists that he studied were actively seeking new jobs.[8]

Considering the character of their jobs and the nature of their training, the high mobility of professors is not at all surprising.[9] Exposure to a variety of intellectual settings undoubtedly strengthens a man's preparedness to teach and research. The exposure of one's ideas to a different audience and exposure to a different set of thoughts generated by one's colleagues are almost certainly beneficial. At the same time, the types of skills developed in one university are almost certain to be directly relevant in another. The basic similarity in institutional structure and in instructional and research procedures and the like means that only the employers differ significantly, not the demands of jobs.[10] Moreover, the very training that qualifies a man to become a college teacher conditions him to adjust to mobility. The conditioning of the college teacher, a history of geographic dislocations, starts with his movement from home to college and continues as he moves from school to school in search of advanced degrees. Anti-inbreeding traditions require that, even at the end of the training period, still another geographic move is required. By the time he becomes "fully certified," the typical college professor has had ample opportunity to know and appreciate varied living experiences.

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[6] Howard D. Marshall, The Mobility of College Faculties (New York: Pageant Press, Inc., 1964), p. 49; Venkatraman Anantaraman, Mobility of Professional Economists in the United States: A Report on the Survey of Patterns and Factors in Their Mobility (Madison, Wisc.: Industrial Relations Research Center, University of Wisconsin, 1961), p. 5.

[7] See my The Market for College Teachers (Chapel Hill, N. C.: University of North Carolina Press, 1965), p. 67.

[8] Howard D. Marshall, The Mobility of College Faculties, p. 51.

[9] Actually, the rate of movement in the professorial ranks is not even as high as that in the laborforce as a whole, but professorial mobility is high in spite of the necessity of geographic moves and in comparison to the mobility rates among other skilled occupations.

Differences in mobility rates. For the employer who enters the market with a need to fill a definite vacancy, the knowledge that many of the current teachers desire to change jobs and that mobility in the market is relatively high is of little help. He needs to know where to locate the supply that is available and who the most mobile people are. Unlike most blue collar worker markets,[11] active supply is not obvious. Only rarely do professors resign their current positions before seeking another. The pool of college professors who are unemployed between jobs is neglible. The flexibility of most teaching jobs allows a man to job hunt "during working hours." Eighty percent of the mobile professors who accepted new employment in September, 1964, had made a firm commitment to their new employers prior to the preceding June. Another 10% had located their current jobs but had not yet made firm commitments. Less than 0.1% of the newly hired professors were unemployed in the previous year.

In addition to identifying those who say they are in the market, it is necessary to differentiate the moveables from the persons who are not really in the market to find another job. Because of the absence of commonly accepted and widely known market intermediaries, the traditions of secrecy that abound in academic labor markets, the heterogeneity of individual professors, and a variety of special motives (some of them relating to the process of higgling with present employers), a significant number of professors make it known that they are available to be moved, when in fact they are not.[12] These various forms of false activity complicate the identification of supply that is relevant to a particular market.

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[10] This is not to suggest that there are no costs of moving. Time is lost in the actual process of moving, of job hunting, and of getting to know the new institutional procedures. However, one can contend that the time involved here is relatively small when compared with that required of other persons switching occupations and industires.

[11] Lloyd G. Reynolds, The Structure of Labor Markets: Wages and Labor Mobility in Theory and Practice (New York: Harper and Brothers, 1951), p. 211.

To determine what sectors of the total stock of current college teachers are most moveable, it is helpful to identify those who are likely to gain the most and lose the least by moving. The likelihood that an individual professor can be moved should be predictable relative to his family-financial situation, department and university peer group, institutional commitment, research and other job obligations, status, and the relative positions of his current and prospective institutions in the hierarchy.

The high benefit groups. For certain groups the gains from mobility are unusually large.

(1) Young professors benefit more than old, for the young will be able to enjoy the greater attractiveness of the new job for a longer period of time. If, for example, the offered job is rated as $1,000 better than the current one, and if this $1,000 differential may be expected to continue as long as the man remains on the job, then the young professor will gain more by moving to the offered job than the older professor, for the young man will receive the differential for a greater number of years.[13]

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[12] These are the spectators, confidence seekers, telegram wavers, and heaven hunters as described in David G. Brown, *The Market for College Teachers*, pp. 63-65.

[13] The inverse relationship between mobility-propensity and age has been noted by students in a wide range of markets. Cf. Lloyd G. Reynolds, *The Structure of Labor Markets* (N. Y.: Harper and Brothers, 1951), p. 21; Venkatraman Anantaraman, *Mobility of Professional Economists in the United States*, p. 5; U.S.D.L., B.L.S., "The Mobility of Electronic Technicians 1940-1952; the Work Experience, Training, and Personal Characteristics in a New Skilled Occupation," *Bulletin 1150* (Washington, D. C., 1954), p. 9; *Minnesota Manpower Mobilities, Bulletin 10* (Industrial Relations Center, Minneapolis: University of Minnesota, October 1950), pp. 12-13.

(2) professors in poor jobs are more moveable, for a higher percentage of the opportunities will be better than their current jobs. The full professor cannot improve rank, whereas instructors, assistant professors, and associate professors can. Persons located in the top schools cannot move to a higher quality school, but those in less than the top group can. College teachers already in the top salary brackets cannot increase their salary by changing jobs, but all others can. In short, when a professor is presently located poorly, he is more moveable because a higher percentage of the vacant jobs will represent an increase in job attractiveness.

Professors who are actively dissatisfied, located in jobs below their abilities or not in accord with their interests, are especially large gainers in mobility. Although it is virtually impossible to identify the majority of this very moveable group, some sectors can be spotted. First are the professors who have outgrown their jobs, or the men who have served their three to seven years at one rank and are ready to be advanced, and the scholars who have located in institutions which emphasize teaching but who have given evidence of a great deal of research activity as shown by the indexes of the professional journals. Also in this group are those who once accepted a job at a very mediocre institution so that they might complete their Ph.D.'s and have just received the degree, the men who have moved to the top of the salary scale in a low paying university, and the men who have served their apprenticeships in undergraduate teaching and are now ready to take on what they envision to be the more challenging work of graduate level instruction. The second sector includes the professors whose jobs have been altered substantially since their original acceptance. The flight of several of the more prestigious members of a university's art department would represent such a change for the young art instructor who came to learn from his senior colleagues. Discontinuation of a special curriculum like Near Eastern Studies, the expiration of funds supporting research in the area of polymer chemistry, the loss or threatened loss of accreditation by the professor's employer, the addition of an unusually obnoxious departmental colleague, and the change of administrators--each of these occurrences might substantially alter the desirability of a once attractive job. In the third sector of discontented professors are those who originally accepted the job with misgiving, knowing that when market conditions improved they would want to move on: for example, those teaching in disciplines other than those of their graduate training or the professors taking too little time to search for their original job.

Empirical evidence that there are professors dissatisfied to the extent that they will move is offered by the fact that roughly one-third of all voluntary job leavers regard their "old job as unacceptable and...[have] a strong desire to move."

Refer to Table 1. It might be that professors are an unhappy lot, always desiring to move. But this is evidently not the case. for 88% of the professors in our sample rate their new jobs as either "excellent" or "good."

Table 1. Job Satisfaction and Mobility

ATTITUDE OF PROFESSORS	MOVED FROM ONE FACULTY TO ANOTHER*	ALL NEW COLLEGE FACULTY**	PROBABILITY OF MOVING***
Dissatisfied Professors	31%	12%	.141
Professors Happy with Their Jobs	69	88	.043

Source: Survey data.
*/These data involving attitude toward previous job exclude all newly hired professors who were not also full-time faculty members in the previous year.
**/These data involving attitude toward present job represent the attitude of all college faculty who are serving in their first year of employment with their current employer, after at least 5 months on the job.
***/Calculated by dividing the number of movers in each group by the total number of faculty in that group.

(3) The largest gainers from movement and the most "movable" professors are the unattached, the professors who have been told that they may not return to their previous jobs. It is possible to predict where these professors, many of whom are quite qualified, can be found by identifying the characteristics of those professors who were involuntarily separated from their 1963-64 jobs in college teaching. This group is singled out for special comment later in the chapter.

That the very groups we would expect to gain the most from movement are in fact the groups that are moving is shown by contrasting the characteristics of job changers vis-a-vis the teaching laborforce. Of those switching between academic jobs, 25% are under 30 years old even though this same age group represents only 7% of all college teachers. In contrast, although professors 60 and over represent 10% of all college faculty, they account for only 2% of the movement. In any given year, the average full-time college teacher who is under 30 is 19.5% likely to switch to another school, compared to a 6.1% probability for the man in his 30's and a 1.2% probability for a man in his 60's.

Table 2. Age and Mobility

AGE	MOVED FROM ONE FACULTY TO ANOTHER*	ALL COLLEGE FACULTY	PROBABILITY OF MOVING**
Under 30	25%	7%	.195
30-39	37	33	.061
40-49	17	30	.031
50-59	9	20	.024
60 and Over	2	10	.012

Source: Survey data and COLFACS study.

*/These data exclude all newly hired professors who were not also full-time members in the previous year.

**/Probabilities are computed by dividing the number of movers in each age group by the number of faculty members in that group.

Full professors, who cannot improve rank through job change, account for 27% of all college faculty but only 7% of the mobility; whereas instructors, who can hardly help but improve their rank, account for 40% of all moves though they represent only 16% of all faculty. Similarly, professors who cannot gain substantially by switching jobs because they are already located at the highest prestige schools are more stable than those at the lowest quality schools. As shown by Table 4, only 19% of the voluntary movers are from the institutions employing the top 20% of all faculty, compared to 23% from the bottom-rated IHE's.

Table 3. Rank and Mobility

RANK BEFORE MOVE	MOVED FROM ONE FACULTY TO ANOTHER*	ALL COLLEGE FACULTY	PROBABILITY OF MOVING***
Instructor	40%	16%	.137
Asst. Prof. or Lower	82	45	.079
Assc. Prof. or Lower	92%	69	.021
Full Professor or Lower	99	96	.012

Source: Survey data and COLFACS study.

*/These data exclude all newly hired professors who were not also full-time faculty members in the previous year.

**/The final figures in columns one and two do not total 100% because some professors are not assigned an academic rank.

***/For example.137 means that in any given year it is 13.7% likely that a full-time faculty member who holds the rank of instructor will leave to accept an appointment on another faculty. Persons who leave to pursue a non-college teaching job are not considered.

Table 4. Prestige of Previous Job and Mobility

PRESTIGE OF SCHOOL BEFORE MOVE	MOVED FROM ONE FACULTY TO ANOTHER*	ALL COLLEGE FACULTY	PROBABILITY OF MOVING VOLUNTARILY
Top 20%	19%	20%	.052
Bottom 20%	23%	20	.064

Source: Survey data and Prestige Index.

*/These data exclude: 1) all newly hired professors who were not also full-time faculty members in the previous year and 2) the 17% of all professors who moved involuntarily.

**/Calculated as number of moves divided by total faculty.

Professors whose circumstances have changed to make a once acceptable job unacceptable are quite evident among the job switchers. For a man who is already out teaching, the receipt of a Ph.D. is often considered a hunting license. Of all the movers who held a full-time faculty appointment, an amazingly high 13% had received a new Ph.D. during the academic year prior to their move. The professors who make up this 13% must represent a significant proportion of all persons who actually earned their Ph.D.'s while out on a full-time teaching assignment, although I know of no data that will provide the needed contrast. Of this same sector of the movers, 28% improve their academic ranks by moving, a suggestion that apprenticeships have been served and that some blockage problem or bargaining situation demands that employers be changed in order to attain the "deserved" rank.

The low cost group. Job switch is costly, especially if the place of residence must be changed. Beyond the actual expenses of moving homes and families between campuses, in many cases houses must be sold, investments in local real estate must be terminated, valuable contacts which enable outside income must be left behind, and new and even unknown opportunities for advancement at the same job or in other jobs offered must be sacrificed. And, in addition to the direct economic costs, job switch often requires drawing children out of a familiar school situation and placing them in an unfamiliar one, leaving behind close personal friends and professional colleagues and facing the necessity of making new ones, abandoning a laboratory facility or a library collection that years of hard work have built and gaining the prospects of repeating the task, leaving behind second and third year graduate students without a mentor and substituting the need to establish rapport with a new set of students, and making irrelevant the storehouse of personal knowledge both of students and of administrative procedures. Virtually no job switch can be made that does not involve one or more of these costs.

(1) Where costs are high, the resistance to mobility is great. It therefore behooves the collegiate recruiter to identify those sectors of the teaching laborforce for which the costs of movement are likely to be low, or relatively low. Here marital status is an obvious criterion, as is the number of children in a professor's family. The unattached professors--unmarried or married with small families--usually avoid the

complications of moving large amounts of home furnishings and of convincing the children that a new community will have similar attractions. Similarly, the rentier is not burdened by the necessity of selling his house.[14] Length of stay in a given community is another visible index of cost to the individual. Undoubtedly time strengthens one's commitment to the community and college. As the years accumulate at a given location, the probability of a man's being movable under realistic terms becomes decreasingly likely. Direct evidence of this is indicated by Anantaraman's finding that, for economists listed in the American Men of Science, 64% of the career shifts made are in the first 10 years of professional experience and that after 10 years it is only 50% probable that even one move will be made during the next 20 or so years.[15] Since professors who are older and of more senior rank will have had, other things equal, greater opportunity to remain at a given school for a longer period of time, the cost differences in movement may well explain a large portion of the significantly inverse relationships between rank and mobility rate and between age and mobility rate.[16] Both of these inverse relationships are held throughout all age groups (by five year intervals) and all ranks. That the hypothesized lesser mobility of associate professors in relation to full professors does not hold strengthens the argument that it is more cost difference than benefit difference that causes the senior professors to be less movable.[17]

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[14] 14. Because statistics on the entire population of college professors are not available, it is impossible to know if the hypothesis that home owners and heads of large families are less mobile is true. Our guess is that the hypothesis is valid. Of the newly hired professors between ages 30 and 50, 21% are unmarried, another 28% are married but have no children, and another 31% are married with fewer than 3 children. Only 15% have 3 or more children, and 5% are separated or divorced. Of the newly hired professors who were also professors in the previous year, only 32% owned homes at their previous jobs.

[15] 15. Venkatraman Anantaraman, Mobility of Professional Economists in the United States, pp. 5 and 29.

[16] 16. When asked about their intentions of remaining at their current institution, a much higher percentage of instructors indicated lack of attachment than full professors, according to a study by Fred J. Kelly, "How Do Faculty Members Like Their Jobs?" Higher Education, Vol. 5 (May 1, 1949), p. 196. Only 29.3% of the instructors indicated "Yes, I'm almost certain I will (stay)" whereas the comparable percentage for full professors was 65.9%

(2) Professors vary in their ability and need to transfer "job capital" from one job to another. Some may move to find that the new location has everything to offer that the old one did, either because they were able to move their entire personal library with them or because the new school has facilities equal to the old. But, due to the very nature of some jobs, "job capital" is sacrificed. We would expect that those groups of professors who had to sacrifice larger amounts of job capital would be the least likely to move, and our data confirm it. Scientists, a group of scholars heavily dependent upon laboratory facilities, which vary greatly in scope and in the availability of particular laboratory pieces of equipment, are considerably less mobile than the social scientists and humanists. There is an obvious reluctance to leave behind the laboratory that has been personally built up to fit one's research interests and needs. Table 6 shows that the average college teacher in science is 4.7% likely to move, compared to 9.1% in the humanities. For similar reasons we would expect professors in the disciplines where the opportunities for easier, outside income are the greatest to be less mobile. Table 7 shows this to be the case.

Table 6. Subject Matter Specialty and Mobility

SUBJECT MATTER SPECIALTY	MOVED FROM ONE FACULTY TO ANOTHER*	ALL COLLEGE FACULTY	PROBABILITY OF MOVING[s]
Sciences**	1190	29,600	.040
Engineering	150	9,500	.015
Humanities***	3050	38,500	.079
Social Sciences	1750	17,000	.103

Source: Survey data and COLFACS study.

*/These data exclude all college professors who did not hold a full-time faculty position during the previous year.

**/Sciences = Agriculture and related fields, biological sciences, physical sciences, psychology in the COLFACS study.

***/Humanities = English and journalism, Fine Arts, foreign languages and literature, law, philosophy, religion and theology in the COLFACS study.

s/means that differences are significant by chi-square at .05.

Table 7. Outside Income and Mobility

EXTENT OF OUTSIDE INCOME	MOVED FROM ONE FACULTY TO ANOTHER	ALL COLLEGE FACULTY	PROBABILITY OF MOVING s
Subject matter specialties in which outside income is frequently earned*	1650	23,890	.069
Subject matter specialties in which outside income is infrequently earned*	2350	30,200	.079

Source: Survey data and COLFACS study.
*/Twenty-three disciplines were ranked according to "Annual Income minus Academic Salary," as reported by the newly hired faculty in our sample. The eight disciplines with largest outside income are included in row 1; and the eight with the least in row 2.
s/ means that difference is significant by chi-square at .05 interval of confidence.

(3) Within the teaching laborforce, there is evidence of a small core of extremely mobile professors, who never stay in one position long enough to develop community ties, job capital, and excessive belongings and regard changing residence as a way of life. For the college that is not interested in hiring a "permanent" faculty member, this group of "rolling stones" can often fulfill a real need in an interim appointment. To define the "rolling stones" group, we identified all those professors who regarded last year's college teaching job as

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17. The hypothesis that associate professors are less mobile because they are less visible was advanced by, among others, Caplow and McGee, The Academic Marketplace (N. Y.: Basic Books, Inc., 1958), p. 42.

unacceptable and also stated that they would not be at their present jobs for longer than one year. When so defined, the group is membered by disproportionately large numbers of unmarried and divorced professors, faculty without their Ph.D.'s and often even without the master's degree, female faculty, and college teachers who are either relatively young or relatively old, but not middle age.

The involuntarily mobile. Every academic year some supply is forced into the market because there is no possibility of continuing with their previous employers. Primarily the result of an agreement made at the time of hiring that employment would be for a limited period without the possibility of extension, but also the product of a man's failure to realize the original hopes of the employer and/or his outright incompetency, the numbers of graduate trained personnel made involuntarily mobile are a significant portion of all mobility, though not nearly as large in the academic market as in the markets for blue collar workers. Our survey indicates that approximately 1,700 professors become available to new collegiate employers because their jobs with their previous collegiate employers are no longer available.[18] The figure, which represents 17% of all movement out of academic jobs, is roughly comparable to Gooding's findings that one-eighth of the registrants at the American Economic Association's convention placement service who left jobs during the last three years were asked to do so by their employers.[19]

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[18] The 1,700 statistic undoubtedly understates the percentage of all terminations which are involuntary in that professors hired by non-academic institutions after being fired are not included. Also excluded are those who enter the market involuntarily from non-academic jobs. There are still other professors who are pressured to leave their old positions, who are likewise not recorded in this statistic. They are men who had tenure, but received the old Army treatment of "You don't have to leave, but we'll make it very unpleasant if you don't." In many of these cases, the school acts so diplomatically that the individual himself is not aware that he is being pushed out. His only impression is that the school was especially helpful in finding him other job offers.

Our question was worded diplomatically enough to catch many who had been treated less subtly, but there were undoubtably those who did not interpret their situations as involuntary moves.

[19] Edwin Gooding, "The 7-year Lag...the Market for Economists," Business Review (Boston: Federal Reserve Bank of Boston, December 1964), p. 10.

The extent of involuntary mobility is greatest in the areas of manpower surplus, where employers may be more particular about whom they choose and employees may be less demanding about assurances of permanent appointments; although the differences are not large. As shown by Table 8, the better institutions, able to attract more candidates by their reputations and salaries, are less reluctant to ask a man to leave.

Table 8. Involuntary Mobility and Quality of School*

QUALITY OF PREVIOUS SCHOOL	INVOLUNTARY AS A PERCENTAGE OF ALL TERMINATIONS[s]
Top 20% Institutions	23%
Middle 60% Institutions	17
Bottom 20% Institutions	13

Source: Survey data and Prestige Index (explained in appendix).

*/Percentages cited probably represent a slight understatement of involuntary mobility in so far as persons who are involuntarily terminated are more likely to accept a non-teaching job rather than another college teaching position.

s/means that percentages are significantly different by chi-square at .05.

The poorer schools cannot afford to be quite as particular about whom they keep. It is reasonable to hypothesize that the poor schools must give assurances of greater permanency in order to compete.

Subdividing the market by disciplines for all schools, the rate of involuntary mobility in disciplines where labor is relatively scarce (i.e., excess demand disciplines) is only 15% as contrasted to 17% in excess supply disciplines. Although the difference is not statistically significant, it indicates that scarcity may limit the actions of employers and may make them more cautious about bringing upon themselves the need to fill a vacancy in a scarce field.

Although there are variations according to the tightness of market conditions, as a rule the persons who enter the market involuntarily are not as qualified as the voluntarily mobile. Voluntary moves are generally made from positions of strength. The poorer candidates, who are not good enough to attract an offer better than their current jobs, seldom enter the market. The underqualified candidate who is not forced out into the market by his employer will very seldom change positions. When all mobility is voluntary, the self-selecting process keeps the poorest candidates off the market--but not so in the case of involuntary mobility. To use Lazarsfeld's words, "the man who stays at the same college for a long time may often do so because he has not received enough professional attention to bring an attractive invitation from another institution."[20] That the involuntarily mobile are generally less qualified is shown by the contrast of the voluntary versus the involuntary movers presented in Tables 9 and 10.

Table 9. Involuntary Mobility, by Educational Attainment

HIGHEST DEGREE EARNED	INVOLUNTARY MOVERS	VOLUNTARY MOVERS	PERCENTAGE OF MOVES MADE INVOLUNTARILY[s]
Bachelor's or less	3.2%	2.4%	22%*
Master's	41.7	30.6	22
Doctorate	55.1	67.0	15
TOTAL	100.0%	100.0%	

Source: Survey data.

*/This means that of all holders of bachelor's degrees who switched college teaching positions, 22% did so involuntarily.

s/means that differences in percentages are significant by chi-square at .05.

Table 10. Involuntary Mobility, by Extent of Publications

EXTENT OF PUBLICATIONS	INVOLUNTARY MOVERS	VOLUNTARY MOVERS	PERCENTAGE OF MOVES MADE INVOLUNTARILY[s]
No Publications	53.2%	35.4%	24%
Up to 10 Journal Articles	36.4	41.2	16
Publications Exceed 10 Journal Articles	10.4	23.5	8
TOTAL	100.0%	100.0%	

Source: Survey data and Productivity Index (explained in appendix).

s/means that percentages are significantly different by chi-square at .05.

Forty-five percent of the involuntary movers, persons who enter the market at the bequest of their previous employers, have not yet earned their Ph.D.'s, compared to 33% of voluntary movers. In other words, of the persons who have not earned their Ph.D.'s, 22% are involuntarily mobile, whereas the comparable percentage for Ph.D. holders is only 15%. Over half of the involuntary movers have no publications to their credit. In contrast, only 8% of the big publishers are forced into the market whereas the corresponding proportion of non-publishers is three times as great (see Table 10).

Compulsory mobility is concentrated at the lower academic ranks: 27% of the professors leaving instructorships and 12% of the persons moving from positions as assistant professors

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20. Paul F. Lazarsfeld and Wagner Thielens, Jr. The Academic Mind (Glencoe, Ill.: The Free Press, 1958), pp. 9-10.

do so involuntarily. At many IHE's, especially the better universities, the non-tenured positions are testing grounds and only the very best performers are invited to join the ranks of the tenured. Once tenure is achieved, involuntary mobility is considerably less likely, though far from unheard of. Eight percent of those who are associate professors at the time of job switch and six percent of the full professors are forced to switch by the unavailability of their old jobs. Tenure simply reduces the range of employer action, it does not guarantee lifetime security. Table 11 shows that almost nine-tenths of the involuntary movers left junior faculty positions.

Table 11. Involuntary Mobility, by Rank at Original Job

RANK AT JOB LEFT	INVOLUNTARY MOVERS	VOLUNTARY MOVERS	PERCENTAGE OF MOVES MADE INVOLUNTARILY[s]
Instructor	58.5%	30.1%	27%
Assistant Professor	28.9	39.1	12
Associate Professor	8.1	17.9	8
Full Professor	4.4	12.9	6
TOTAL	100.0%	100.0%	

Source: Survey data.
s/means that percentages are significantly different by chi-square at .05.

All of these data suggest that involuntary movers are most relevant as a source of supply to the employers who cannot afford to be as particular as others and who are seeking to make appointments at the junior ranks.

Individual benefits from mobility. For the individual professor, willingness to change jobs has rewards. Because his new employer has to make the terms attractive enough to overcome the costs of movement, the typical mover almost always advances in salary and often in rank and quality of the school. The data are cited in Table 12. Sixty-nine percent of the moves result in increased annual income. Twenty-eight percent advance in rank and 30% move to a better rated institution. One-sixth of the movers increase both rank and quality. Those persons who accept lower ranks (27%) or less prestigious institutions (49%) usually trade off one factor for another: for example, a decrease in rank in order to gain a position in a better school or vice versa.

Even the involuntary job changers gain in rank (34%) and income (95%), though their chances of gaining in prestige (20%) are not as great as voluntary movers (35%).

Table 12. Change in Rank, Income and Institution Prestige Between Old Job and New*

FACTORS CHANGED	TOTAL	INCREASE	DECREASE	SAME
Income**	100%	69%	16%	15%
Rank	100	28	27	45
Prestige of Institution	100	30	49	21

Source: Survey data and Prestige Index (explained in the appendix).

**/Incomes compared are current versus the income that would have been made if the man had remained at his old job.

*/ These figures include only persons who switched from one faculty to another.

For both voluntary and involuntary movers, the importance of the visibility afforded by publications is reflected by the greater gains achieved by the bigger publishers. Publishers have between a 25% and 30% greater chance of increasing in each of the factors (rank, quality, salary) than non-publishers.[21] Similarly women, who often cannot seek their best possible offers because they must locate in the area of their husbands jobs, move to higher prestige schools only half as frequently as men (15% vs 30%).

GRADUATE STUDENTS AS A SOURCE OF SUPPLY

The faculty members already teaching at another college or university are the largest single aggregation of graduate-trained personnel, but they do not represent even a majority of the supply to a particular market. Only 32% of the newly appointed college faculty for the academic year 1964-65 were faculty members in 1963-64. Nearly 40% were graduate students. All sources outside the academic community including secondary and primary schools, business, government, and foundations furnished only 25% of the new appointees. Thus, emerging graduate students are the largest single source of supply in academic labor markets. A more detailed look at the characteristics of the student sector of supply is most appropriate.

Table 13. Activity Last Year of All Movers*

ACTIVITY LAST YEAR	NUMBER OF MOVERS**	PERCENTAGE OF ALL MOVERS**
Teacher in Higher Education	9,000	32.0%
Student	11,500	39.6
Teacher in Primary or Secondary Education	3,000	9.7
Business, Government, or Foundation	3,000	10.2
Other	1,500	4.6
Unknown (non-response)	1,000	3.4
TOTAL	29,000	100.0%

Source: Survey data.

*/Data are for 4-year colleges only, except that a person who taught in either a 2-year or a 4-year college last year is counted as a "teacher in higher education."

**/The absolute figures are computed on the basis of the percentages and rounded to the nearest 500. For this reason the total does not equal the figure cited earlier in this chapter.

Benefits and costs. For most graduate students the decision is "Which job should I accept?" not "Should I accept a job?" The market entry decision follows naturally from the anticipated completion of a degree. Just as the typical undergraduate seeks employment (or graduate school, or the service) at the completion of his studies, the typical graduate student enters the market as he completes his studies. Unlike most faculty members, graduate students rarely have the easy option of remaining in place. Like the faculty members who may not return to their previous employment, graduate students are forced into the market by the necessity of finding employment. Benefits from market entry are high.

And costs are low. Since graduate study is pursued with the anticipation of a change in residence when studies are completed and since most of the students' peers are also moving, the community ties developed by permanent faculty are not relevant to graduate students. Moreover, emerging students are often single or married with children too young for school. Many students reside in housing available only to students and become ineligible to remain in place upon completion of their studies. This means that a change of residence must take place whether or not a new job is taken, so that the marginal moving costs involved in accepting a new job are often quite low. Both because benefits are high and because costs are low, the emerging graduate student in most cases enters the market.

From the employers' viewpoint, emerging graduate students may be a preferred source of supply. "Although graduate students are inexperienced and unknown in the class-room situation, difficult to evaluate regarding future prestige value and research interests, and prone to move on to another school after only a few years of service, they are also willing to work for less pay, to accept a position at the bottom of the departmental hierarchy, and to receive constructive criticism. Graduate students are recently trained and knowledgeable about the latest developments in their fields. Because graduate students have recently been in close contact with some of the better known men in the field, the hiring department is usually able to locate a trusted and respected recommender."[22]

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[21] Publishers are defined as persons who have published more than 10 articles or its equivalent and non-publishers as persons who have published nothing.

Statistics cited by Berelson show that, despite the recent entry of many new institutions into offering graduate work, there is still a relatively heavy concentration of degrees granted. This concentration enables collegiate recruiters to survey most of these new entrants by visiting a relatively small number of schools.

"Of the 180 universities that conferred doctorates in the period 1936-1956, over half averaged five or fewer a year" and "of the 175 institutions that conferred one or more doctorates in 1957-58" a third gave fewer than 10.[23] Three-fourths of all doctorates granted between 1936-56 were from 30 institutions.[24] Even in 1959-60, after many new institutions had expanded into the doctoral field, the ten top-producing universities granted 35.8% of the doctorates and only 30 universities granted more than 100.[25] The active sources of new recipients of master's degrees are far more numerous, but still considerably fewer than the different loci of the same men after they have accepted their first jobs. In 1959-60, 195 different institutions granted more than 100 master's degrees with one school, Columbia University, granting 2744. Many of these IHE's, however, grant almost all of their advanced degrees in the field of education [26] to students headed toward a teaching career in primary and secondary education and are, therefore, not substantial suppliers of prospective teachers for 4-year colleges and universities.[27] Thus, at both the master's and doctor's levels, the concentration of graduate studies at a

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[22] See my The Market for College Teachers (Chapel Hill, N. C.: University of North Carolina Press, 1965), p. 58.

[23] Bernard Berelson, Graduate Education in the United States (N. Y.: McGraw-Hill Book Co., Inc., 1960), p. 104.

[24] National Research Council, Doctorate Production in United States Universities 1936-56 (Washington: National Academy of Sciences-National Research Council, 1958), p. 17.

[25] U. S. O. E., Earned Degrees Conferred, 1959-1960 ("OE-54013-60; Circular No. 687"; Washington: G.P.O., 1962).

[26] Bernard Berelson, Graduate Education in the United States, p. 94.

[27] U. S. O. E., Earned Degrees Conferred, 1959-1960.

relatively small number of institutions eases the recruiters' problem of locating relevant supply.

The timing of market entry. The one uncertainty about graduate student supply involves the segment that has not yet received its highest degree. This group has the option of remaining on in graduate school and must annually weigh the relative merits of taking a job versus continuing studies toward the completion of the degree.

Practices in different disciplines vary widely, according to the emphasis placed upon data and research as contrasted to words and teaching, the levels of excess demand, the availability of financial support, and the opportunity costs of not entering the market without the terminal degree.[28] In the scientific disciplines, where there is a strong emphasis upon research competence and the management of data and where the shortage of college teachers is the greatest, the tendency is to remain in graduate school until the Ph.D. is in hand. Here the larger scientific disciplines are illustrative. Of the new professors hired directly from graduate school, 62% of the chemists hold Ph.D.'s, 49% of the physicists, and about two-thirds of the engineers. On the other hand, graduate students in the humanities, disciplines which place less stress upon research competency and where the shortages of manpower are not so great, are more prone to accept their first jobs without their Ph.D.'s. The figures cited in Table 14 indicate that in most of the humanities less than 20% have earned their Ph.D.'s when they leave graduate school to accept their first teaching job. The social sciences, where the emphasis upon data is less than the sciences but more than the humanities and where faculty shortages are usually not as acute as in the sciences but greater than in the humanities, fall between the two groups.[29]

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[28] These arguments are elaborated in my, *The Market for College Teachers*, pp. 58-60.

[29] Statistics compiled by the National Education Association *Teacher Supply and Demand in Universities, Colleges, and Junior Colleges, 1961-62 and 1962-63* ("Higher Education Series: Research Report 1963-R3"; Washington: N.E.A., 1963), p. 15 reaffirm our conclusions. The data are cited below.

FIELD	% NEW TEACHERS WITH DOCTORATES
Sciences	39%
Humanities	17%
Social Sciences	29

Table 14. Last Year's Students Who Entered College Teaching Holding Doctorates, by Discipline

DISCIPLINE*	PERCENT HOLDING DOCTORATE	
Sciences		
Biochemistry (S)	78%	
Civil Engineering (D)	74	
Electrical Engineering (D)	69	
Chemistry (D)	62	
Mechanical Engineering (D)	62	
Physics (D)	49	
Earth Sciences (N)	43	
Clinical Psychology (N)	42	
General Zoology (S)	40	
General Biology (N)	14	
Weighted Average		55%
Humanities:		
English and Literature (S)	19%	
Music (S)	18	
Art (N)	11	
French (S)	9	
Weighted Average		16%
Social Sciences:		
Political Science (N)	45%	
History (S)	36	
Economics (D)	26	
Sociology (N)	24	
Weighted Average		32%
Other Fields:		
Educational Services (D)	69%	
Counseling and Guidance (N)	56	
Mathematics (D)	38	
Secondary Education (N)	36	
Physical Education (S)	2	
Weighted Average (all fields)		36%

Source: Survey data and Shortage Index (explained in the appendix)

*/The letters in parentheses indicate the relative shortage of professors in each discipline, with D (excess demand) meaning the scarest and S (excess supply) the least scarce.

In comparison with students in the word disciplines, students seeking science doctorates sacrifice less by remaining in school until their degrees are completed. In the sciences large corps of graduate student personnel are required to carry out laboratory work in connection with the wide variety of research projects that their graduate school professors are encouraged to pursue by the easy availability of financial sponsorship. These jobs provide finanical aid, so that as early as 1954, 66.5% of the graduate students in the natural sciences received some financial assistance, compared to only 32.2% in the humanities and arts.[30] Largely due to the more generous finances but also a reflection of differential attitudes toward the necessity of a full-time teaching experience prior to the receipt of the doctorate, students in the sciences are able to gain their degrees, on the average, one and a half years sooner.[31]

As a rule, the incentives for students in the sciences to remain in graduate school are greater than those in the humanities and the social sciences. The Ph.D. means more in the sciences than in the humanities. Although the non-Ph.D. who is trained in a shortage discipline will receive a higher salary ($6,800) than the non-Ph.D. in a surplus discipline ($6,500) and he is therefore sacrificing more income to remain in school, this is not the relevant comparison. The pertinent statistic is opportunity cost: how much is an individual sacrificing by leaving school before he gets his degree. The comparisons between students entering college teaching with and without their Ph.D.'s, shown in Table 15, are revealing in this regard. In the excess demand fields, the average student entering teaching with his degree receives $1,600 more salary, and a teaching load that is 4.6 hours lower. He is 62% more likely to be appointed at a higher rank. In these fields, the competition among collegiate recruiters for the relatively few highly qualified candidates bid up the price of Ph.D.'s to very high levels. In the excess supply fields such as history and English, the differentials for Ph.D.'s are not as great: $1,000 salary, 1.4 hours teaching load, and a 56% chance for a higher rank.[32] To enter the market without the Ph.D., therefore,

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[30] National Science Foundation, "Highlights of a Survey of Graduate Enrollments, Fellowships and Assistantships, 1954," Scientific Manpower Bulletin, July 29, 1955.

[31] Bernard Berelson, Graduate Education in the United States, p. 158.

[32] The advantages of holding the Ph.D. in different disciplines and discipline groups are given on the following page.

FIELD	SALARY ADVANTAGE	RANK ADVANTAGE	TEACHING LOAD ADVANTAGE
Sciences:			
Biochemistry (S)**	$2000	.56	3.2
General Biology (N)	1100	.83	3.0
Civil Engineering (S)	1100	.61	1.7
Electrical Engineering (D)	2500	.98	4.7
Mechanical Engineering (D)	900	.62	1.4
General Zoology (S)	1100	.61	1.7
Chemistry (D)	1200	.50	2.6
Earth Sciences (N)	800	.55	2.1
Physics (D)	1600	.56	3.6
Clinical Psychology (N)	1100	.33	2.8
Weighted Average	$1400	.58	3.1
Humanities:			
English and Literature (S)	$ 800	.64	1.5
Art (N)	1300	.61	2.4
Music (S)	1700	.42	1.7
French (S)	900	.50	1.6
Weighted Average	$1000	.58	1.6
Social Sciences:			
Economics (D)	$1200	.61	2.6
History (S)	800	.43	1.2
Political Science (N)	800	.64	1.6
Sociology (N)	1100	.85	1.7
Weighted Average	$1000	.63	1.8
Other Fields:			
Secondary Education (N)	$-200	.50	-3.0
Education Services (D)	1900	.72	1.8
Mathmatics (D)	1800	.65	6.9
Physical Education (S)	1600	.81	-1.5
Counseling and Guidance (N)	1500	1.48	1.2
Weighted Average (All Fields)	$1300	.60	2.3

Source: Survey data and Shortage Index (explained in the appendix)

*/The rank average was derived on a scale which assigns a weight of 1 to instructors, 2 to assistant professors, 3 to associate professors, and 4 to full professors.

**/D means excess demand field; S means excess supply; and N means neutral.

involves a greater sacrifice for the men trained in excess demand disciplines. It is not surprising that, in spite of the larger absolute incentives to leave graduate school before getting the degree, these same people find it even more to their advantage to remain in school.

Table 15. Worth of Ph.D. to Emerging Students

DISCIPLINE	SALARY ADVANTAGE	RANK ADVANTAGE (higher)	HOURS LOAD ADVANTAGE (lower)
Excess Demand Disciplines	$1,600	.62	4.6
Excess Supply Disciplines	1,000	.56	1.4

Source: Survey data and Shortage Index (explained in the appendix).

A final reason why persons trained in excess supply disciplines leave school without the Ph.D. before those in the excess demand fields is uncertainty. When a good job comes along in an excess supply discipline, the candidate is likely to take it in fear that next year the market may not be as strong or that, in any case, not as good a job will be available. In contrast, the man who knows that he is in demand and that the demand is not likely to diminish in the immediate future need not worry about the state of the market one year hence. Only the man in an area of manpower surplus must remain flexible to take what he believes to be the best opportunity regardless of when it becomes available.

From all these data, one concludes that it is easier to draw a student in the humanities out of graduate school before he completes his degree than it is to attract personnel from a data discipline. The pull of excess demand is less important than the adhesion of opportunity costs.

Profile of the student supply. Before expending too much effort searching and attracting graduate students, the collegiate recruiter should make a careful determination of his needs and how these needs might best be served, for the graduate student portion of supply has several special characteristics which make it both more and less desirable.

Table 16. Selected Characteristics of Emerging Students Versus Job Switching Professors

CHARACTERISTICS	PERCENT AMONG EMERGING STUDENTS	PERCENT AMONG SWITCHERS FROM ONE FACULTY TO ANOTHER
Age: Under 30 years old[s]	64%	26%
Publications: None[s]	67	41
Marital Status: Single[s]	30	21
Highest Degree: Less than Doctorate*	65	37
Sex: Male	83	85
Professional Assn. Memberships: None*	16	6
Permanency: One year appointment*	19	12

Source: Survey data.
s/Difference between two groups of movers is statistically significant by chi-square at .05.

For the collegiate recruiter working under a tight budget, the graduate student portion of supply is especially suitable. Compared to teachers switching faculty jobs, 38% more students are under 30 years old and 9% fewer students are married. These young, single students can be expected to accept a lower salary and lower rank than experienced, older teachers, who have family obligations. Furthermore, students are generally less well known (measured by a relatively greater percentage of non-publishers) and usually less qualified (measured by a relatively greater percentage of non-Ph.D.'s). As a result, they have less bargaining power.

Graduate students are a good supply source for filling temporary positions. A significantly greater percentage of students than "switchers" indicated that they regarded their new job as temporary.

On the other hand, these same characteristics make graduate students less desirable for the employer seeking an experienced, well qualified man with a good reputation in his profession to fill a permanent job. These observations seem apparent; nevertheless, the data make them less conjecturous.

THE LOOSELY CONNECTED GROUP

Even taken together, present faculty and entering students do not represent an adequate supply of qualified personnel to meet demand in the academic labor market. More personnel must be drawn in from outside the academic community. These are people who are recruited from beyond the supply which naturally makes itself available to the market.

Each particular academic institution faces its own supply curve of those who are willing to accept appointments at given levels of compensation. Since more professors want appointment at the more prestigious schools, other things equal, the supply curves tend to be farther to the right the better the institution. Beyond the willingness of the individual suppliers, however, there is another restraint that each institution faces: its own willingness to employ the persons who make themselves available. The better institutions, because they can afford to be more particular, work under a stronger self-constraint. Because of their higher quality standards, the higher prestige institutions limit relevant supply, even to the extent of creating a shortage.

The better institution faces a plentitude of willing suppliers, few of whom are acceptable. This results in more extensive recruitment outside of the academic community: recruitment of the "loosely connected" group. Members of the "loosely connected" group are reluctant college teachers who would not be teaching in higher education were it not for the recruiting efforts of one particular employer. They did not initiate contact with their current collegiate employer, and they said that if they had not accepted their current jobs they would not be in college teaching this year. This group includes, among others, students who were expecting to continue in school, housewives anticipating to remain at home, businessmen, researchers, and government employees lured to teaching by a specific recruiter's attractive offer. Content with their former way of life, these individuals had to be persuaded by the academic community to enter the teaching force. In total the group represents almost a third of all newly hired professors or roughly 10,500 individuals.

Because they are more likely to want to fill vacancies with experienced professors, more likely to have professional schools, and more able to compete with salaries outside the academic community, the better schools draw 57% of their professors from the loosely connected group. As one moves down in quality of school the proportion of the newly hired from the loosely connected group declines, until at the lowest quality schools they account for only one-fourth of those hired. The better schools are more able to compete successfully for the persons with interests in several different careers whereas the poorer schools rely more heavily upon persons totally committed to teaching at the college level.

Only slightly older (median age of 34 years vs. 33 years for the rest of the mobile professors) the "loosely connected" are more highly qualified, with 54% having their Ph.D.'s as opposed to only 42% of the others being so qualified, are more likely to be publishers (17% vs. 10%), and are more likely to be research oriented (14% vs. 7%). The "loosely connected" group in a better bargaining position consequently drives better bargains. Though they are only 31.4% of the new faculty they account for 52.4% of the new full professors, and 46.3% of the new associate professors. They also tend to receive binding commitments earlier in the year with 38.0% of them signed on before March in contrast to only 30.5% of the other new faculty members.

SUMMARY

Employers in the academic labor market may view supply as consisting of current teachers, graduate students, and those qualified to teach but who currently are not teaching. Cutting across these three categories are various groups of individuals which characterize supply and which, if identified, make the recruiting process more efficient. They are a high benefit group, a low cost group, a loosely connected group, and an involuntarily mobile group.

In general, college teachers are a mobile group. They will change jobs if the right offer is made, even though they are not actively seeking a new job. Specifically, those who will move either stand to benefit highly from the move or have relatively low costs of moving. In the former group are the young faculty, those presently in a poor location (i.e., low rank, low salary, or low school prestige), the actively dissatisfied faculty, and the involuntarily unemployed. Those in the latter group are single, do not own their home, do not have many community ties, or have little "job captial" to sacrifice. A third group, the involuntary movers, is actively seeking new jobs. Except for reasons of incompetency, involuntary movers tend to come from the higher prestige schools, the lower faculty ranks, and the excess supply disciplines.

Graduate students are the largest single portion of supply and the easiest to identify. The major uncertainty about graduate student supply is the timing of market entry. In this respect, a breakdown by discipline is revealing. Students in the word disciplines tend to enter the market much more often before receiving the Ph.D. degree than students in data disciplines. For the most part this differential in timing of market entry is explainable by the opportunity cost of not having the terminal degree.

The loosely connected group are college teachers who would not be teaching in higher education except for the efforts of a particular recruiter. They may be former students or former non-academicians, but they indicate that recruitment should not be limited to those who have previously announced an interest in teaching.

SOURCES
OF
IMMOBILITY ... CHAPTER 4

In economic theory the best profit allocation of scarce resources is fundamentally dependent upon the assumption that resources will move towards that employment paying the highest economic remuneration. Chapters 2 and 3 concentrated upon a characterization of the mobility which does exist in the academic labor market. Chapter 2 discussed the theoretical importance of mobility and 3 described the gains to individuals of moving between jobs. Obviously neither the academic labor market, nor any market, is characterized by perfect mobility of resources. Since mobility is important to the most efficient operation of the entire economy and it has definite advantages to individual professors, it is worthwhile to inquire into the restrictions on mobility in the market and the reasons for the restrictions.

Classical wage theory makes several assumptions pertinent to the movement of resources in the market. Consideration of immobility and present market practices, in the light of these classical assumptions which are made about the "perfect world," provides insight into the operation of the market. This chapter contrasts the academic labor market to six traditional assumptions: (1) entry into and exit from the market is unrestricted; (2) complete knowledge exists among all participants in the market; (3) movement of resources is instantaneous and costless; (4) all decisions are economically rational, made in accordance with the principles of profit maximization; (5) all resources are homogeneous and perfectly substitutable; (6) decisions are made by a large number of demanders and suppliers acting independently of each other.

Mobility may, of course, be initiated by the demander or the supplier. The demander may wish to replace a relatively inefficient and no longer desired resource with a more productive, more demanded one. The supplier may wish to move to a higher paying, more attractive employer. Both of these decisions result in mobility in the market. From the point of view of supply, the former is involuntary mobility and the latter, voluntary. A third type of mobility results from the ordinary replacement of resources consumed in production, e.g., retiring and death.

It is impossible, at least in a practical sense, to determine the most desirable amount of mobility which should exist in the market under the most efficient operations. Nevertheless, a good theoretical argument can be made for having a market with no restrictions on mobility of resources. Thus, it is beneficial to specify the sources of immobility in the market and try to reduce their effect. It becomes unnecessary to specify precisely the most desirable amount of mobility.

There is one danger in attacking the restrictions to mobility as economically undesirable. One may make the erroneous assumption that all immobility is dysfunctional to the well being of the market participants. To the contrary, immobility, or stability, has functional elements both for employee and employer. For the employee it satisfies such psychological needs as those for security, friendship, status, and group identification. The employer avoids the costs of turnover, the sociological problems of adjustment to change, and gains the benefits of the monopsonist from the lack of perfect knowledge about job opportunities. The dysfunctional aspects of restrictions to mobility arise from the point of view of the welfare of society.

THE ETHICS OF THE LABOR MARKET

The code of ethics existing in the academic labor market, made necessary by the tremendous expansion of higher education and the resulting need for adjustments in the recruitment and resignation of faculty members, becomes a major source of immobility. While clear standards of conduct in the exchange of personnel facilitate the smooth functioning of the marketplace, at the same time they result in immobility for those in the market.

One of the immobilizing factors involved is the timing of mobility after one academic year ends and before another begins, in order that course continuity may be preserved and the least disruption occur. Violating the terms of a contract is, in essence, violation of the code of ethics, although this is not followed as rigidly in the large multiversities where diverse faculty and flexible teaching load assignments allow for some latitude. However, generally professors accept the May 15 deadline for resignations that the American Association of University Professors set, in cooperation with the American Association of Colleges.

Contracts also constrain employers: most institutions set July 1 as the termination date for teaching contracts and three and a half months' notice as the standard minimum. The code of ethics demands that each professor understand the prospects of his job for the coming year by March 15, in order that he may make valid judgments concerning the desirability of change. Decisions reached by institutions about terminations after March 15 cannot be implemented until after the following year, as resignations decided upon after May 15 cannot become effective for another year. Institutions have set May 1 as the terminating date for raiding faculty. These time limitations immobilize the professors who do not decide to relocate before these dates.

While codes of ethics are easily defined and difficult to enforce, social pressures result in a general adherence to the deadlines in resignation and termination. Evidence of this is that of those teaching in higher education in 1963-64, and changing institutions for 1964-65, 80% had made binding commitments to new jobs before the end of May. It is reasonable to expect that most of the remaining 20% of professors had informed their employers of their intention to leave and were deciding among several alternative offers.

If market ethics are respected by administrators as well as by professors, the mobility of the professor is drastically reduced. The traditions also encourage early planning, and the tardy planner must pay a penalty by remaining at his job in spite of a desire to move. Although the timing of vacancies promises some measure of job security to the individual and stability to the institution and the market, mobility and turnover are constrained.

Anti-pirating pacts, gentleman's agreements between institutions against the wooing away of faculty from a sister institution, are another cause of professor immobility. Job switch costs both employees and their employers. In most cases the costs are somewhat commensurate. Occasionally, however, the costs of movement for individuals are substantially less than those for their employers and it behooves employers artificially to restrict movement. Two schools located in the same city are a case in point. For the individual to switch employers does not involve the usual cost of uprooting community ties and moving furniture. The institution, however, is left with a vacancy and must undergo the same costs of recruitment, orientation, and general disruption as if its departed faculty member had moved 1,000 miles. Since the institution which hired the new faculty member is likely to be on the losing end of a similar transfer at a future date, both schools will probably gain by a collusive agreement not to hire one another's faculty. Here the individual faculty member loses, but the institutions gain. The institutional gains from antipirating agreements normally extend beyond the particular situation to relate to the preservation of harmonious relations.[1] The pacts maintain equilibrium between closely related universities but place the professionals at the institutions in an immobile position even if a special opportunity exists.

There also exists in the academic market folklore condemning too much mobility. Though such personal bias held by many administrators probably does not exist very widely, measurement is almost impossible. The professors themselves still feel that too much mobility is bad, per se, leading to the feeling that the relatively stable teacher is the more marketable. This folklore encourages immobility. Annual job changing is often resisted by fear that instability will be viewed suspiciously by potential employers. The result is that the potential movers remain in place to avoid getting a reputation as too mobile. Thus benefits that might be obtained from a move may be passed up in fear of the sanctions resulting from too little mobility.

MARKET ENTRY: RESTRICTED OR UNRESTRICTED?

The assumption concerning free entry into and exit from the academic labor market applies both to universities and colleges as the demanding firms, and to teachers as the suppliers of resources. Our study does not provide any data on the entry and exit of firms. Indeed as a labor market study it is only indirectly concerned with the factors which influence demand. We are concerned with the firm only in so far as it influences some characteristic of the resources it employs. For present purposes focus is upon practices and traditions of existing colleges and universities which restrict movement of teachers.

Promotion from within. One practice impeding inter-institutional mobility is the promotion of lower ranked faculty within the college or university. Table 1 shows this. Eighty-eight percent of all hiring is heavily concentrated in the two lowest ranks. But the new hirees must eventually be promoted, for a majority of all college teachers are associate and full professors. A comparison between the two distributions indicates that the dispersion by rank hired into is almost 300% greater than the dispersion by rank of all teachers. A shift in the distribution of this magnitude is highly indicative of a policy of promotion from within rather than hiring at the upper ranks.

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[1] For further discussion see my *The Market for College Teachers*, pp. 78-79.

Table 1. Academic Rank of Newly Hired Professors

ACADEMIC RANK	NEWLY HIRED FACULTY	ALL COLLEGE FACULTY
Instructor	40%	16%
Assistant Professor	44	29
Associate Professor	10	24
Full Professor	6	27

Source: Survey data and COLFACS study.

The result of the hire low and promote policy is a narrowing of the size and degree of competition in the markets for senior professors. The markets become less perfect as one progresses in rank. An individual's mobility is concentrated in the lower ranks and more limited in respect to senior positions.

It is wrong to imply, however, that no hiring occurs at the senior level. Table 1 shows that 16% of the faculty hired in 1964-65 were either associate or full professors. Sometimes departments are forced to hire at the senior level because of misplanning or disruption of plans.[2] Also, the schools which otherwise cannot compete in salary or prestige are able to improve their bargaining position by offering security through rank.

Inbreeding and outbreeding. Caplow and McGee[3] have coined the phases, "inbreeding" and "outbreeding," to cover practices of hiring one's own graduates and of requiring graduates to complete an internship at some other acceptable institution before returning to their alma mater. These two practices in the long run result in the restriction of movement by those already in the teaching profession.

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[2] See my, The Market for College Teachers, p. 37 for discussion of promotion from within. Also see pp. 36-41.

[3] Theodore Caplow and Reece J. McGee, The Academic Marketplace (New York: Basic Books, Inc., 1958), pp. 49-50.

Although the extent of inbreeding appears to be declining,[4] it is still a force which limits the supply that will be considered by college administrators. A study of schools in the Southeast suggests an increasing taboo against hiring one's own graduates, especially direct from graduate school.[5] The feeling is that both the school and the individual benefit from requiring graduates to get experience in at least one other institution. This may be a stimulus to mobility in the short run, but it does not necessarily extend to the long run.

The practice of outbreeding indicates that the factors which originally work against teaching at the same school where the highest degree is received dissipate over time. At some point the advantages of inbreeding begin to outweigh the disadvantages. Since the candidate is known to the administration, he can be rated accurately and is probably "safer" than another unknown candidate. He is familiar with the institution and already knows what is expected of him. Finally, the expense and effort of recruiting him is relatively small.[6]

Tenure. The meaning commonly associated with tenure is best gleaned from the AAUP principle first announced in 1940: "After the expiration of a probationary period, teachers or investigators should have permanent or continuous tenure, and their service should be terminated only for adequate cause, except in the case of retirement for age, or under extraordinary circumstances because of financial exigencies."[7] This principle is interpreted to mean that the teacher's contract should contain written acknowledgement of tenure which should begin after a probationary period of seven years, including teaching experience at all institutions. If tenure will not be granted, notice should be given at least one year before termination.

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[4] In 1943, J. B. Roberts suggested that inbreeding between 1931-1941 had been on the wane. Inbreeding Practiced in Appointing College and University Teachers and Administrators (Nashville, Tenn.: George Peabody College for Teachers, 1943).

[5] See my The Market for College Teachers, p. 77.

[6] Logan Wilson, The Academic Man: A Study in the Sociology of a Profession (New York: Oxford University Press, 1942), p. 53. See also J. S. Cleland, "Inbreeding in College and University Faculties," School and Society, March 18, 1944, pp. 193-195.

[7] "Academic Freedom and Tenure," AAUP Bulletin, vol, 48 (March 1962), p. 51.

The possible benefits or harm to the academic profession created by the tenure system has long been a subject of controversy.[8] Opponents claim that the security of tenure stabilizes the market and stifles the initiative of the profession. Supposedly the lack of competition causes mediocrity and generally results in decreased quality of production by those whom tenure frees from the pressures to keep pace with advancing knowledge. Supporters are usually on the defensive. They cite attitude studies and measures of turnover to refute opponents. They continually stress the need for those within the profession to remain alert to new developments in their fields. Most of all they emphasize the necessity of tenure to preserve academic freedom.[9]

Some purposes often stated to justify tenure are its necessity for the "freedom of teaching and research and of extramural activities."[10] To meet the high demand for graduate trained personnel tenure is said to provide a sufficient degree of economic security to make the profession attractive to competent men and women. Edwin O. Stene proposes that it actually preserves and maintains the high standards of performance that a profession assures. Furthermore, it enhances productive effort because it creates a sense of belonging to the institution rather than a sense of being employed by it.[11]

The controversy over tenure is not easily solved. Our survey indicates, as expected, that tenure is probably a stabilizing influence in the market, but it does not resolve the question about the desirability of the stability created.

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[8] See a 1928 study by the Research Division of NEA on the ill effects of tenure. Teacher Supply & Demand in Colleges and Universities, pp. 2-12.

[9] The oldest standing committee of the AAUP is Committee A on Academic Freedom & Tenure. Nearly every issue of the AAUP Bulletin carries articles from or about this committee.

[10] "Academic Freedom and Tenure," AAUP Bulletin, Vol. 48 (March, 1962), p. 50.

[11] Edwin O. Stene, "Bases of Academic Tenure," AAUP Bulletin, Vol. 41 (Autumn 1955), p. 587.

For one thing, the practice of granting tenure reduces the employers' latitude on involuntary dismissals and, therefore, decreases the amount of involuntary movement in the market.

The mobility of tenured professors is lower than that of the non-tenured, even after a correction is made for age differences. Assuming that all associate and full professors are tenured and that no assistant professors or instructors have tenure, Table 2 shows that the persons with tenure are a smaller portion of movers than of the total population of professors.[12] For both the group of professors under 40 and the group over 40, the senior professors are less likely to move than the junior ones. Since age is not the only variable that is strongly related to academic rank, any conclusion based upon these data must be a guarded one. The data are not inconsistnet with the hypothesis that the practice of tenure increases stability by reducing movement within the laborforce, but it may be that the tenured professors are those who have already attained career goals and are, therefore, less likely to move whether or not they have tenure.

Although it may decrease the tendency to move, the practice of tenure does not freeze manpower in place. Not only professors willing to leave one tenured position for another, 21% of all persons moving out of associate and full professorships accept non-tenured appointments. For this group, tenure is obviously not an immobilizing force.

Table 2. Tenure and Mobility

AGE GROUP	PERCENTAGE AT SENIOR RANKS:	
	OF MOVERS	OF ALL PROFESSORS
Under 40 years old[s]	19%*	22%
40 and over[s]	69	73

Source: Survey data and COLFACS.

*/19% of all movers under 40 are currently employed as associate or full professors.

s/means that the difference between 19% and 22% is significant by chi-square at .05.

In some instances we may assume that tenure actually increases mobility. First, the AAUP ruling that tenure must be granted after seven years or the man must be dismissed undoubtedly gives rise to involuntary movement among some professors who would have remained at the same institution indefinitely if that employer had not been forced to a decision. Also, some professors will move from a job that offers little prospect for immediate tenure in order to obtain the security of a tenured position at another school. And, finally it may be that for the man contemplating a move between two senior positions the guarantee of tenure at the new position reduces the uncertainty of the new situation so that the move is made when, without tenure, the man would have remained in place.

Over all, the influence of tenure upon turnover rates does not appear to be high. In markets of excess demand; such as those existing today in most academic disciplines, tenure (and security)is not a major element in decisions to move and not to move.

Fringe benefits. A third practice often linked to immobility is the payment of income in the form of non-wage benefits. For the entire American laborforce fringe benefits have become increasingly important in the past two decades, so much so that "it is said that seniority systems, health and welfare plans, and negotiated pensions have chained the worker to his job; that the adaptability and flexibility of the labor force are being sacrificed; and that a new industrial feudalism is being built. The crux of the problem, it is held is that the worker can no longer afford to quit his job."[13] In spite of these fears, several recent studies of blue collar labor markets have shown that, except for special sub-groups, fringe benefits do not significantly reduce worker mobility.[14]

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[12] The rank of a professor used in the table is that assumed at the new job. Since more increased rank than decreased it, if the rank at the previous job were used, the percentages in column one of Table 2 would have been smaller. Correspondingly, the contrast between the two columns would have been more striking, even if slightly deceiving.

[13] Arthur M. Ross, "Do We Have a New Industrial Feudalism?," American Economic Review, Vol. 48 (December, 1958), p. 903.

[14] Ibid., p. 918 and H. S. Parnes, "Workers' Attitudes toward Job Changing: The Effect of Private Pension Plans, " in Gladys L. Palmer, et al ., The Reluctant Job Changer (Philadelphia: University of Pennsylvania Press, 1962), pp. 45-80.

Apparently the same conclusion applies to academic institutions. Melvin Lurie's recent study of the higher education industry divides all IHE's according to the type of pension plan offered to faculty. One group of institutions has fully vested plans: their faculty may take their pension rights with them when they move. A second group of IHE's offer plans that are non-vested in the sense that their faculty lose all rights to a pension if they leave. If pensions are a substantial consideration in decisions to move and not to move, we would expect that turnover in the non-vested group of schools would be considerably lower than in the vested group. But this is not the case. Lurie concludes that the turnover rates are essentially the same.[15]

Confirming the Lurie finding, when IHE's are dichotomized according to those which contribute more than 5% of salary to pensions and those which do not, the accession rates[16] for the two groups are virtually identical. The IHE's paying high pensions must do about the same amount of hiring as those offering less attractive plans.[17] Hypothesizing that not pensions, but tuition for faculty children plans and sabbatical leaves, are the mobility reducing fringe benefits, similar dichotomizations were drawn on these variables. Though the differences in average accession rates are not significant, the group of schools with sabbatical leave plans (Accession rate: 19.6%) evidence slightly higher turnover than those without (18.1%), and the IHE's with a tuition plan for faculty children have a somewhat higher average accession rate (18.4%) than those with no such plan (17.7%). Taking all three types of fringe benefits together, when the 33 IHE's that offer all three types of fringe benefits are compared with the 49 institutions that offer none of them, the accession rates are 16.7% and 16.5%, respectively. In no instance is the accession rate significantly higher among institutions that fail to offer large fringe benefits. Unless there is some generally prevalent third factor that causes the institutions with unusually high fringe benefits to have a higher accession rate than institutions with lower fringe benefits, it would seem that high fringe benefits are not a large restraining influence upon mobility.[18]

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[15] Melvin Lurie, "The Effect of Non-vested Pensions on Mobility: A Study of the Higher Education Industry," Industrial and Labor Relations Review, Vol. 18 (January, 1956), pp. 224-337. Lurie's general conclusion does not, however, apply to certain sub-markets. He notes, for example, that vesting does affect mobliity in expected ways when only universities are considered, and when only certain regions are studied.

[16] The accession rate is "total full-time faculty newly hired for 1964-65" divided by "total full-time faculty 1963-64" and is calculated for each institution according to the method explained in the previous chapter. The rates are 17.3% for low pension schools; 18.8% for high.

[17] Not only the average accession rates but also the distributions of accession rates are not significantly different for the two groups: of all schools in the high retirement group 29% have turnover rates over 20%, compared to 39% for group of schools offering less than 5% of salary in retirement benefits.

PERFECT KNOWLEDGE VERSUS IGNORANCE

Another constraint upon mobility is the lack of communication. Candidates are often ignorant of the very vacancy that would interest them most. And employers, not knowing about the availability of the best candidate, often hire the second or third best. In this regard, academic labor markets are similar to others, where the sellers of labor services are unable to identify all potential customers, and the buyers do not know about all of the sellers. In the academic labor market, the ignorance is the product of both the unjustifiably high costs of pursuing a complete market search and the "culture of the market" which condemns overt advertising of availabilities.[19]

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18. It is appropriate to issue several caveat about the data on which this conclusion is founded. First, accession rates were used when it would have been most desirable to have a measure of voluntary outward mobility. That is, we studied "hires" when we should have studied "quits." Although there is certainly a strong connection between the amount of hiring and the amount of outward mobility, differences in expansion rates, rates of retirement, and involuntary mobility may also affect accession rates.

Secondly, though it seems improbable, it may be that high turnover causes an institution to adopt an extensive fringe benefit program and that the program reduces the turnover rate to an average level. The fact that the turnover rate is no higher in the schools with fringe benefits does not necessarily mean that the fringe benefits have had no effect.

19. A more complete discussion of the role of ignorance in the labor market is given in my The Market for College Teachers, pp. 87-90, 146-150, 166-168, and 173-176.

Although it is not possible to determine what the volume and character of mobility would be if perfect market knowledge did exist or whether the increase in information would in fact improve the functioning of the academic labor market, an indication of the extent of ignorance can be gained by noting the knowledge that professors have of the market when they do move. It is evident that professors' market knowledge, even those who actually switch jobs, is most incomplete. The typical professor (median) investigates fewer than two jobs (not counting the job he is leaving). Although he has a vague impression that many jobs are available, he actually knows of less than five openings.

If the Southeastern social scientists interviewed in my previous study are typical, professors often lack vital information not only about the job offers they consider and reject but also the one they actually accept: over one-fourth of the more than 100 professors interviewed confessed that they did not know about matters such as library facilities, office facilities, fringe benefits, the quality of students, promotion possiblities, and committee responsibilities at the time they signed their contracts.[20]

The frustration that job changing professors experience in learning about alternative jobs available received expression when 35% of our nationwide sample of newly hired professors rated the opportunities for finding jobs in their field as either "poor" or "very poor."

Employers too, faced with costs constraints and the acceptance deadlines of competitive recruiters, must limit their market searches and, as a result, have only an incomplete knowledge of the candidates available. For most positions no more than four or five candidates are considered seriously and, except for the beginning positions, employers rarely recognize more than ten potential suppliers.

No doubt ignorance on both sides of the market changes the character of mobility and perhaps its extent. Ignorance generates false moves that would not be made with perfect knowledge. It cannot be determined, however, whether the benefits that would be received from the consequent reduction of ignorance and false moves are sufficient to compensate for the expenditures involved in any concerted campaign to increase the flow of market information. It may be that the false movement resulting from market ignorance is economically justifiable, or it may not.

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[20] Ibid., p. 175.

MOVING RESOURCES: COSTLY OR COSTLESS

Because almost all job changes in the academic profession require geographic relocation, moves are expensive. An indication of the extent of expenditures is given by the answers to the question, "How many days of productive time did you lose when moving between jobs?" The mean response was 10.7 days. The substantial variation around the mean is shown by Table 3. As expected, individuals with the greatest personal involvment at their previous location experience the greater costs: for example, married more than single (12 days vs. 8 days), couples with children more than those without (19 vs. 9), last year's faculty more than students (13 vs. 7), and researchers with non-transferable job capital more than teachers (17 vs. 12).

Table 3. Days of Productive Time Lost in Moving

NUMBER OF DAYS	PERCENT OF ALL MOVERS
One or less	28%
Seven or less	65
Fourteen or less	82
Thirty or less	93
TOTAL	100%

Source: Survey data.

In addition to the time costs, the immeasurable losses from leaving friendships and contacts behind, and substituting the uncertainty of a new work and living environment are immobilizing. Beyond these the monetary expense of moving must also be weighed against the gains from the new job.[21] Although the precise effects of these costs upon the extent and direction of mobility cannot be determined, for many groups the costs of switching jobs are large enough to restrict movement to a new job that offers only a slightly better net advantage. The costs have the greatest mobility-reducing effect upon professors with extensive personal involvement in their present jobs.

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21. Candidates usually pay moving expenses themselves.

PAYER OF MOVING EXPENSE	PERCENT OF ALL MOVERS
Candidate	65%
Employer	12
Candidate and Employer	6
Third Party	2
No Move of Residence	15
TOTAL	100%

Source: Survey data.

ECONOMIC RATIONALITY: FACT OR MYTH

Since economic rationality depends upon perfect knowledge, which does not exist in the market, complete economic rationality cannot exist. Nevertheless, one may determine whether the best economic decisions are made with the limited knowledge available.

From a solely economic viewpoint, the optimal use of scarce resources requires that these resources flow to the producers who need them most. And, it is assumed that need is expressed in the market by the willingness and ability to bid these resources away from other employers. Thus, in academic labor markets, optimal allocation of faculty members requires that prospective professors accept those positions that offer the greatest "net advantage." To the extent that professors have uneconomic regional preferences, loyalties to particular IHE's and environments, the production of teaching and research services is less than it might be.

Later in this volume an entire section is devoted to a study of the reasons why professors choose jobs. Here it is noted that these reasons are not solely economic. To a considerable extent, professors fail to accept the offers from the IHE's that would pay them the highest salary and place them at the highest rank. It is sufficient at this point to say that many of the laborers in the groves of academe are not economic men and this gives rise to a market imperfection.

SUBSTITUTABILITY OF LABOR VS UNIQUE SKILLS

Another traditional assumption about markets is that the resources are homogeneous. Professors are not. Although some substitution exists between the disciplines, balkanization is the rule. Faculty resources are further differentiated by the quality and extent of training, by regional preferences, by attitudes toward the importance of research versus teaching, and by many other factors that are identified in Part II of this volume. In general, the heterogeniety of supply and the tradition of individual higgling cause the academic labor market to be divided and redivided into units too small to generate effective competition.

INDEPENDENCE OF ACTION: UNIONIZATION

Professors have no strong unions. If there is a general labor organization for professors it is the American Association of University Professors, which is a voluntary, nationwide organization open to all college teachers, both full-time and part-time. Slightly over 100,000 members, about one-fourth of those eligible, pay $10 annual dues to the organization which is pledged to promote the interests of higher education and to advance the standards and ideals of the profession.[22] Perhaps its major concern is the preservation of academic freedom. If an IHE acts against the academic freedom of a college faculty member, an AAUP member or not, the national office of the AAUP mobilizes its legal and diplomatic corps to reverse the decision. If unsuccessful in gaining a reversal, delegates to a national convention, aided by the recommendations of a specially appointed investigating committee, decide whether the IHE's action should be sanctioned. If sanction is chosen, the AAUP publicizes the violation of academic freedom and the name of the violater. In another regard, the AAUP is an active lobbyist for bills advancing higher education.

But the AAUP differs from other craft unions in many substantial ways. It is not exclusive unionism: initiation fees are non-existent. The only requirement to join is the payment of annual dues and a signed statement that the prospective member is, in fact, a college teacher. Initial membership is contingent upon being a college teacher, but the reverse is not true. It is not necessary to belong to AAUP to teach. This organization is not a collective bargainer, for academicians are proud of the higgling tradition and are offended by any intimation that they are unable to bargain for themselves. More a lobbyist than a trade unionist, the AAUP is not a major force in the market.

If the AAUP has any effect upon mobility, it is to increase it. By providing information on the salaries offered by nearly 600 IHE's in its annual survey,[23] by urging the IHE's to adopt fringe benefit programs that are transferrable without lapse or loss from one employer to another, and by making available pages of the AAUP Bulletin for "jobs wanted" and "candidates available" advertisements, the AAUP increases awareness in the academic community of market conditions and attempts to reduce one of the major costs of moving (the possible loss of fringe benefits).

Although the AAUP is the largest solely academic professional association, it is only one among hundreds. In each major discipline there is a primary association to which economists, or historians, or physicists belong. Each of the major disciplines is then divided regionally into a Northeast Association, a Southern Association, a Western Association, and so forth. The major disciplines are also sub-divided into sub-specialty associations such as the Econometrics Society, the Industrial Relations Research Association, the Regional Science Association, and so forth. The academic profession does not lack membership associations: only a partial list compiled by Carlton Bowyer includes approximately 500 such organizations.[24]

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[22] "Systematic Examination of the Current Structure and Functioning of the Association," AAUP Bulletin, vol. 51, no.2 (May, 1965), p. 110.

[23] See "The Economic Status of the Academic Profession: Taking Stock," AAUP Bulletin, vol. 2 , no. 2. (Summer, 1965) pp. 201-248.

In spite of their members, disciplinary professional associations are not usually a major factor in academic markets, at least not consciously so. Professional associations exist primarily to provide a forum for the exchange of ideas and opinions among men of similar training or similar research interests. Their two major roles are to publish a journal containing papers on subjects of common interest and to organize a convention where members may convene for intellectual and social exchange. The professional association is a medium for transmitting technical information which is of little interest to a mass audience and of special interest to a selected one. Incidentally, these same associations often are media of information about employment opportunities for the persons of specialized interest and training who belong to them. Not all talk at an annual physics convention is about physics: much is said in the corridors about employment opportunities. Whenever specialists are brought together, some type of market information is likely to be exchanged, and annual conventions and meeting are notorious for their job talk. Even if the professional association makes no attempt to provide any type of convention placement service, the very act of bringing specialists together undoubtedly increases the flow of market information.

At these same conventions, as is described elsewhere in this volume and in Volume I of this study, many professional associations provide a formal communications center where job-seeking candidates are put in touch with candidate-seeking employers. Illustrative of this service is the convention placement service provided by the American Chemical Society — where 75 staff members are hired to run the service.

In much the same manner between conventions, through the pages of their journals and special publications (e.g., "Vacancies Available" published by the American Chemical Society) and in their associational headquarters offices, these same professional associations continue to provide liaison services. In each instance the associations are increasing the flow of information and thereby improving mobility.

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[24] Carlton H. Bowyer, The Directory of Educational Associations (Emporia, Kansas: Kansas State Teachers' College Press, 1962).

Whatever the strength of academic unions may be, they do not affect immobility in the same manner that trade unions do. Because of the national character and the high prestige associated with the teaching profession, the academic unions do not make a professor immobile. The unions are able to increase mobility through their information facilities. A professor can improve his job search techniques if he is a member of one of the large, active, professional unions and thereby decrease his immobility. Thus immobility will be decreased as the union distributes job information which helps to widen the horizon for the less informed professors.[25]

SUMMARY

The forces preventing the academic labor market from being perfectly competitive are many, although artificial constraints such as employee unionization and employer collusion common in other markets are unimportant in academia, a number of other factors operate to decrease the extent and effectiveness of mobility.

When viewed against classical wage theories concerning mobility in an economic utopia, the academic labor market appears to be maverick. Entry into and exit from the market are not unrestricted. Because of such practices as inbreeding, promotion from within, anti-pirating pacts, tenure, and fringe benefits along with adherence to the code of ethics, movement within the market is not free. Ignorance inhibits mobility and fosters bad decisions by the participants. Nor is movement costless; for it involves both monetary and emotional costs. Decisions to relocate are seldom made within the confines of economic rationality or profit maximization. In addition, substituability and homogeneity of resources are mythic in the profession: the individuals have specialized talents and skills that make them largely unsubstitutable. The market does follow classical theory in one respect, there is an independence of action in the market: the unionization that does exist in the form of the AAUP and other disciplinary organizations exerts little control of the market. Thus, for the most part, conditions and practices in the academic labor market are immobilizing influences. Although some of these barriers to movement are economically sound, in the overall picture, the restrictions almost certainly bring about a misallocation of resources.

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[25] There are at least two exceptions to this general statement. First, the tenure policy of AAUP which states that a man automatically should be given tenure at least by the end of seven years service probably reduces the amount of employer-initiated mobility (involuntary movement). The importance of this constraint, though small in the excess demand markets of 1964-65, might increase in less "favorable" times. Second, the division of college teachers into disciplines such as history, economics, and political science reduces the visibility of the generalist (e.g., the social scientist), for he has no disciplinary home.

These restrictions are crucial. In this era of faculty scarcity and emphasis upon the role of education in economic and human prosperity, methods must be devised to alleviate the restrictions. Before discussing these methods, however, it is important to gain a more thorough understanding of the academic labor market. In the next chapter, the extent of faculty shortage is emphasized.

THE
MANPOWER
SHORTAGE.........CHAPTER 5

Faculty scarcity is well documented. At least since the end of the Korean War IHE's have not been able to hire all the faculty they desire: adequate supplies have been lacking. The rapid rise in college enrollments, the increased demands for research that specialized society places upon its educational institutions, and the increasingly generous lures placed before potential faculty members by business and government employers who need their specialized skills have combined to create what many have called a "staffing crisis."

There are many indications of the present and impending shortage. In a 1960 study of over 500 private liberal arts colleges, Earl McGrath found that 68% of the schools had difficulty obtaining "properly qualified teachers."[1] Howard Marshall, studying faculty mobility in the fields of chemistry, economics, and English in the 1960's, observed a level of turnover that he concludes indicates strong excess demand in all fields.[2] The U.S.O.E. has repeatedly issued heavily documented warnings about the shortage of college teachers.[3] Another cassandra, the biennial survey of the National Education Association, warns that 49.5% of the universities and colleges report that they have been unable to fill their faculty positions.

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[1] Earl F. McGrath, The Quantity and Quality of College Teachers (New York: Institute for Higher Education, Teachers' College, Columbia University, 1961).

"even by lowering their standards." When asked about the future, 77.5% of the reporting officials say that they foresee even greater shortage ahead.[4] Most predictions lament that the shortage will grow worse before it lessens. Richard Porter, applying the Harrod growth framework, predicts continuing shortages through the 1970's.[5] Summarizing the three most widely discussed projections, Harold Wolozin, concludes that general shortages will prevail for the next decade, at least.[6] Experts disagree upon whether they would be a shortage today if all faculty were properly utilized, i.e. if IHE's were better managed and advantage were taken of already available faculty-economizing technology. Experts also disagree on the present magnitude of the shortage and upon when the shortage will end.[7] But it is a rare person who argues that, given present production functions and present faculty supplies, there is not a shortage today.

The rapid rise in faculty salaries over the past 5 years is indicative of the shortage. In spite of the fact that the Ph.D. output of our graduate schools rose more rapidly (47%) than enrollments (33%), academic salaries skyrocketed 21%, compared to only a 13% increase in the manufacturing wage level.[8]

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2. Howard D. Marshall, *The Mobility of College Faculties* (New York: Pageant Press, Inc., 1964).

3. See, for example, The *Biennial Survey of Education in the United States*.

4. National Education Association Research Division, *Teacher Supply and Demand in Universities, Colleges and Junior Colleges, 1961-1962 and 1962-1963*, ("Higher Education Series: Research Repod 1963-R3"; Washington, D. C.: N.E.A., 1963), p. 24.

5. Richard C. Porter, "A Growth Model Forecast of Faculty Size and Salaries in United States Higher Education," *Review of Economics and Statistics*, vol. 47, No. 2 (May, 1965), pp. 191-197.

6. Harold Wolozin, "How Serious is the Faculty Shortage?" *Challenge*, vol. 13, No. 5 (June, 1965), pp. 4-8. The projections discussed are: (1) Bernard Berelson's *Graduate Education in the United States*, (2) U.S.O.E.'s "Ten-Year Objectives," and (3) N.E.A.'s 1959-1960 survey of teacher supply and demand.

7. Recent literature on the projections and problems of faculty supply and demand falls into two broad classifications. The first group -- represented by Ray Maul ("Look at the New College Teacher," *The Educational Record*, Vol. 46, No. 3, Summer

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1965, pp. 259-66 and the Biennial Reports of Teacher Supply and Demand, *op. cit.*), the Carnegie Foundation for the Advancement of Teaching (*Annual Report*, *1963-64*) John Chase ("The Numbers Game in Graduate Education," *Journal of Higher Education*, Vol. 35, March, 1964, pp. 138-143), and J.W. Nason ("Is There A Balm in Gilead?" *Liberal Education*, Vol. 51, March 1965, pp. 5-12) -- see an immediate and continuing critical shortage of qualified staff and pleas for dynamic corrective action. The second group -- represented by Bernard Berelson (*op.cit.*), Harold Wolozin (*op. cit.*), Richard Porter (op. cit.), Allan Cartter ("New Look at the Supply of College Teachers," *The Educational Record*, Vol. 46, No. 3, Summer 1965, pp. 267-277 and "The Supply and Demand of College Teachers," a paper read before the American Statistical Association Meetings, September 8, 1965), and Robert Farrell (Cartter and Farrel, "Higher Education in the Last Third of the Century," *The Educational Record*, Vol. 46, No. 2, Spring, 1965, pp. 119-128) -- propose that current shortages are not overly critical and that dire shortages are not likely to develop in the foreseeable future.

Much of the work up to now has been impressionistic. Where rigorous models have been developed, the lack of information has necessitated the assumption of critical ratios on the basis of *a priori* reasoning. Since small changes in assumptions have been shown to cause large variations in conclusions, it is extremely important to extend these rigorous models with more realistic assumptions as more data becomes available.

Mr. Jay Tontz is currently working with data collected in this study to revise earlier predictions by providing empirically based assumptions to a model incorporating more variables and lagged relationships.

Looking at the recent two year period between 1962-63 and 1964-65, and comparing the mean salary for all professors in the earlier academic year with the mean salary for only the newly hired professors in the latter, at every academic rank there is at least a 6% rise in salaries.[8] At the associate professor rank, the increase is 9%.[9] In all but one of the twenty-three disciplines listed in Table 1, the average salary paid to all assistant professors in 1962-63 was lower than the salary paid to emerging students in 1964-65, in spite of the fact that the 1962-63 assistant professors were far more experienced.[10]

The rise in salaries has been common to all disciplines as has the shortage. It would be wrong to imply, however, that all types of professors have been in equally short supply. The shortage has been general, but it has been greater in some areas than in others.

EXCESS DEMAND BY DISCIPLINE

To measure the relative excess demand in individual labor markets, a "Shortage Index" has been computed for the 23 disciplines which appear most often in our survey. The aim here is

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8. This figure is computed from data contained in U.S.O.E., Trends in Higher Education Planning and Management Data 1957-58 to 1959-60 (Washington: G.P.O.; 1961); U.S.O.E., Higher Education Planning and Management Data 1960-61 (Washington: G.P.O., 1962); U.S.O.E., Higher Education Salaries 1961-62 and 1962-63 and 1963-64 (Washington: G.P.O., 1963, 1964, 1965); and U.S.D.L., Manpower Report to the President and A Report on Manpower, Resources, Utilization, and Training (washington: G.P.O., 1965)

9. The 1962-63 salary data are from National Education Association, Teacher Supply and Demand in Universities, Colleges and Junior Colleges, 1961-62 and 1962-63, p. 11. The 1964-65 data are ours: Professor ($12,031), Associate Professor ($9,703), Assistant Professor ($8,129), and Instructor ($6,541). The percentage increase stated above is quite conservative in that the 1964-65 sample includes faculty at more obscure schools and includes only persons who are newly hired, a disproportionately large number of whom have just achieved their rank.

10. The precise differentials for each discipline are cited in Table B of the Shortage Appendix. Note that the 1964-65 figures are for Ph.D.'s only, whereas the 1962-63 figures include all assistant professors. When the differentials between the same group in 1962-63 and all emerging students newly hired in 1964-64 are computed, two of the 23 disciplines show lower salaries in the latter period.

to determine the adequacy of current supplies of college teachers and variations in adequacy by field. Excess demand connotes the extent of the professorial shortage. Though many measures approximate excess demand, no one is clearly the best. To overcome some of the shortcomings of the different measures (or perhaps simply to add them all together) we have constructed seven tables that rank the disciplines according to characteristics which indicate excess demand.[11] The ranks from each table are averaged to obtain a "mean rank" or "rank of ranks," which is the "Shortage Index." The tables are listed below to give an idea of the data included:

List of Tables Used to Measure Excess Demand by Disciplines:

(1) Starting Salaries of Newly Graduated Ph.D.'s
(2) Extent of Salary Increase
(3) Salaries Paid to Full Professors in 1962-63
(4) Academic Rank of Newly Graduated Ph.D.'s
(5) Unfilled Positions as a Percentage of All Positions
(6) Percentage of Newly Graduated Ph.D.'s Entering College Teaching
(7) Expansion Demand as a Percentage of All Hiring

In this list it is not possible to identify which variables are meant to measure supply and which demand, for this is not the intent.

Separate measures of demand and of supply are difficult to develop. We might, for example, measure demand for physicists by counting the number of undergraduate physics majors and measure the supply of physicists by recording the number of Ph.D.'s granted during the last twenty-five years. However, demand measured by enrollment is only a very rough approximation, for one does not need to be a physics major to demand the teaching services of a physicist. A much more important limitation of using the student-faculty ratio as a measure of comparative shortage in two disciplines is that the desirable student-faculty ratios differ greatly among disciplines: some disciplines require small classes whereas others permit large ones. Similarly, supply as measured by Ph.D. production is grossly inaccurate, for not all Ph.D.'s enter teaching and not all who teach have Ph.D.'s.

But separate measures of demand and supply are not necessary to measure excess demand. All that is needed is one measure of demand relative to supply. Here market equilibriums suffice. The function of a labor market is to allocate the current supply of labor among the various buyers, and to provide extra incentive in those fields with the relative greatest shortage so as to attract current and future supply. The most readily available measure of incentive intensity is the promise of monetary rewards. Tight markets will require employers to strike unusually attractive bargains with the professors who are fortunate to be in the disciplines where professors are scarcer. In the scarcity disciplines, the market mechanism will develop the greatest monetary incentives to attract individuals and to induce others to train in these fields. The harder bargains will be reflected in lower teaching loads, higher salaries, and higher ranks at the same age.

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[11]. These tables are available in the Shortage Index Appendix along with a description of the computational processes.

Men who are equally qualified will strike different bargains depending upon the scarcity of the skills which they offer for sale. As Paul F. Gregory so aptly put it in his Baseball Players: An Economic Study, "It is scarcity of ability rather than ability itself which, on the supply side, explains the higher salaries of modern ball players compared with the old-timers."[12] So it is with professors, salaries are not rewards for intelligence and training, they are scarcity premiums. Or, to put the same thing in a different way, when offering the same terms, employers will get a less qualified man in the scarcity markets. Based on this reasoning, three measures which include salary data have been chosen: 1) the average salaries received by newly graduated Ph.D.'s; 2) the differences between the average salaries received by new Ph.D.'s and the average salaries received by already hired assistant professors; and 3) the salary level of full professors. The higher the salary, or in the second case the greater the difference, the greater the scarcity. Newly graduated Ph.D.'s are chosen because they are a group of professors relatively homogeneous in both experience and training. And, since most new Ph.D.'s are hired at the assistant professorial rank, a comparison of the average assistant professor's salary and the average new Ph.D.'s measures the extent to which salaries are rising. Full professors are chosen, for it is at this level where the greatest salary differentials exist and where the differences in market pressures are likely to be most obvious.

Another indication of tight markets is the rank at which comparable faculty are hired. Again, only newly graduated Ph.D.'s are considered in a attempt to gain homogeneity. It is reasonable to expect that in tight markets, individuals able to drive a harder bargain will start out at higher ranks. Thus the disciplines are ranked, assigning the most excess

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[12] Paul F. Gregory, Baseball Players: An Economic Study (Washington: Public Affairs Press, 1956).

Table 1. Measures of Excess

DISCIPLINE (IN ORDER OF RANK)	SHORTAGE INDEX	RANK OF DISCIPLINE	
		MEAN SALARY, NEW PH.D.'S	SALARIES: NEW PH.D. VS. ASST. PROFESSOR
Electrical Engineering	1	1	1
Educational Services & Administration	2	2	2
Mechanical Engineering	3	3	3
Mathematics	4	6	5
Physics	5	8	11
Economics	6	5	6
Civil Engineering	7	4	10
Chemistry	8	14	15
Counseling & Guidance	9	7	4
Clinical Psychology	10	13	19
Sociology	11	15	16
Art	12	9	8
Secondary Education	13	10	9
Political Science	14	16	20
Earth Sci. & Geology	15	19	18
Gen. Biology	16	17	13
Biochemistry	17	12	23
Physical Educ. & Health	18	11	12
Music	19	18	7
Gen. Zoology	20	20	22
English & Literature	21	21	14
History	22	23	17
French	23	22	21

Source: Survey data and See Shortage Index Appendix.

*/The rank of "1" means that excess demand is greatest in that discipline.

**/Information unavailable.

Demand in 23 Disciplines*

BY VARIOUS MEASURES:

HIRE IN RANK, NEW PH.D.'S	PERCENTAGE NEW PH.D.'S TEACHING AT IHE	FIELDS WITH MOST RAPID EXPANSION	MEAN SALARY, FULL PROF.	UNFILLED BUDGETED POSITIONS AS PERCENTAGE OF TOTAL POSITIONS
1	**	3	6	6
3	**	8	1	**
7	**	2	4	8
15	7	1	10	2
14	2	4	7	1
6	9	15	9	7
5	**	12	8	12
12	1	7	12	5
2	**	11	23	11
18	3	6	2	**
4	11	16	11	3
16	8	9	17	16
10	**	14	21	**
19	12	10	3	10
13	4	13	5	20
9	5	23	22	4
8	**	5	14	19
11	13	18	18	17
20	10	22	19	18
17	6	20	15	15
21	15	17	16	13
22	14	19	13	14
23	**	21	20	9

demand to those disciplines which in 1964-65 gave a greater portion of the newly graduated Ph.D.'s higher ranks.

To supplement measures of excess demand, relating to the terms of employment, the rates of expansion in each discipline, are used as another index. Excess demand is measured by noting the proportion of newly created jobs in disciplines. Rapidly expanding fields, it is reasoned, are experiencing a lag in Ph.D. production and are thus the fields that are experiencing the greater shortages. It is interesting to note that when this measure is developed the results are very similar to those developed from salary data.

Still another index of excess demand is one which concentrates upon "opportunity costs." Non-academic employment is more feasible in some disciplines than others: for example, in engineering as contrasted to history. Non-academic jobs typically carry higher salaries and present a lure to low-paid college professors. Thus in the areas where non-academic employment is a possibility, there is a demamd-pull that does not exist in the other markets. Assuming that the supply pressures are the same, the demand-pull in the disciplines where outside employment is feasible represent a marginal force which causes these same disciplines to be high in excess demand. To measure this the fields are ranked by the percentage of new Ph.D.'s who enter teaching vs. non-teaching employment, those disciplines with the lowest proportion entering teaching being the ones with greatest excess demand.

Probably the best single indication of where shortages exist is to ask the IHE's to indicate positions they had planned to fill (positions that had been budgeted) but remained unfilled because they were unable to find candidates. The National Education Association did this, and the data, from their survey provide still another ranking of the discipline scarcity.

All seven of these indexes are presented in Table 1. The disciplines are arranged in order of their Shortage Indexes. The first listed, electrical engineering, is the field where faculty are the most scarce. This table is presented at this point without comment, for it is referred to often in later chapters.

SUMMARY

Increasing demands for the outputs of universities have caused the demands for the inputs to rise faster than the supply of these inputs. Thus in the academic labor market of 1964-65 there is a gap between supply and demand. This gap precipitates the conditions of a seller's market where employers decry the shortages, employees initiate movement, salaries rise, other conditions of employment improve, and positions go begging for want of people to fill them.

The tightness of the market varies from discipline to discipline, but everywhere it is tight and expected to get tighter. Tightness is reflected in the absolute salary levels and in the rate of salary increases. The individual discipline markets are tighter in the expanding fields and in those fields where the opportunities outside the academic community are greatest.

Many measures have been devised to gage the extent of excess demand in the various submarkets of the academic disciplines. All have shortcomings. To alleviate these individual weaknesses I have gathered data on a large number of different indicators in the market: past and present salaries, rank given new hirees, rates of expansion by field, opportunity costs and unfilled positions by field. Ranking twenty-three disciplines on each of these variables a Shortage Index was computed. This then provides a measure of relative excess demand by discipline and is used in the rest of the volume when testing hypotheses on reactions to degrees of tightness in a labor market.

ADJUSTMENTS TO LABOR SHORTAGE ....Chapter 6

Faced with the shortage of staff, IHE's must devise ways and means of overcoming this constraint. The object of this chapter is to set forth the possible responses to shortage and to indicate their relative importance in the 1964-65 market.

At the most elementary level, staff shortages exist when all vacancies are not filled, when the quantity supplied exceeds the quantity demanded at the going rate of remuneration. The demand and supply schedules intersect at a level higher than the going rate. To adjust to the shortage, IHE's, the firms in the academic labor markets, may follow three strategies: (1) decrease demand, (2) increase supply, or (3) increase the remuneration offered. Each strategy has its unique advantages. Each is pursued.

DECREASE DEMAND

Decreasing demand involves a decision either to produce less output or to alter the shape of the production function so as to require fewer inputs of faculty services.

Limit output. A college may decide, for instance, to admit fewer students or to limit the number of special services and the amount of research productivity of its faculty. A firm may consciously admit that the resources needed for production are simply not available at a reasonable price and may limit its output accordingly. The enrollment quotas and planned rates of expansion that virtually all IHE's profess are conspicuous evidence that output restriction is a frequent response to the problem of faculty shortage. Unfortunately, without a full-scale study well beyond the scope of the present one, it is not possible to indicate the exact extent to which demand for faculty is limited by such decisions or, congruently, to estimate how much greater the shortage would be if the IHE's were to respond to all the demands placed upon them. Unquestionably the demand for college faculty would be somewhat larger if the constraint of the limited availability of qualified faculty did not bind.

Alter the production function. Even if staff is not available to produce the desired output if the traditional methods of production are used, it may be possible to develop new methods of production which economize on the use of faculty services. By altering the production function, it may be possible to employ less faculty without sacrificing output. For example, faculty may be economized by registering more students for each class and hiring grading assistance, by scheduling fewer different courses with more students in each[1], by employing mechanical devices such as television, motion pictures and foreign language laboratories, by hiring more secretarial assistance to free faculty from many of the more routine chores, by turning over some of the responsibilities for routine committee work to student government and to professional administrators, and by encouraging more independent student work. Methods of teaching might be altered so as to economize faculty time: for example, one suggestion that has been advanced is for faculty to assign 10 term papers throughout the semester but to read only one or two of them. The aim of most of these labor saving innovations is to reduce the faculty-student ratio without jeopardizing the quality of teaching and of research. At first it would seem that many schools are adopting these technological innovations and are thereby bringing about the needed reduction in the demand for faculty. In spite of these innovations, however, faculty is not being economized. During the last decade, the faculty-student ratio has remained relatively constant. The economies in staff might have resulted in decreased need for faculty but have resulted instead in giving more individual attention to students and more time for research.

The adjustments which are made relate to changing the nature of the need for staff rather than the size of the need. Production functions are altered. But instead of substituting capital for labor, plentiful labor is substituted for scarce labor. For example, when the poorer institutions are unable to attract sufficient numbers of experienced professors to fill their classrooms and laboratories, they hire inexperienced professors and make the necessary adjustments in scheduled courses and course assignments. Instead of hiring at all academic ranks, the poorer IHE's, as shown in Table 1, concentrate their recruitment at the lower ranks among those candidates in relatively greater supply. Similarly, instead of competing for scientists who are in relatively short supply, some of the IHE's with low ability to pay specialize in offering training in the humanities where staff is more available. And when courses in shortage fields must be taught (e.g., economics), they hire persons in related but not so scarce fields (e.g., history) to teach them. In many ways IHE's adjust the nature of their demand to fit the realities of supply.

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[1] 1. See Memo to a College Faculty Member by Earl J. McGrath (Teachers College, Columbia University: Bureau of Publications, 1961), pp. 37-42.

Table 1. Academic Rank of New Faculty, by Quality of School

	PERCENTAGE HIRED AS:*			
QUALITY OF SCHOOL	INSTRUCTOR	ASSISTANT PROFESSOR	ASSOCIATE PROFESSOR	FULL PROFESSOR
0-10%	29%	45%	11%	11%
10%-20%	32	47	11	8
20%-40%	36	44	11	6
40%-60%	36	48	8	6
60%-80%	40	43	12	5
80%-100%	46	37	9	6

Source: Survey data and Prestige Index.

*/ Rows do not total 100 because about 3% of all professors are appointed to positions without being assigned an academic rank.

INCREASE SUPPLY

A second line of attack the firm may pursue when faced with an excess demand situation is to shift the supply curve to the right. By extending effort in recruitment and by lowering hiring standards, the number of persons available to a firm may be increased.

Extend recruitment. To most schools there are individuals who would make themselves available if they knew of a vacancy. The potential rewards, then, from recruitment are great. First, there are many candidates who are actively seeking new teaching positions who are unaware of a vacancy at a given school, for the communications systems in academia do not provide for the free flow of information. By sending more notices of vacancy to more sources of supply, additional candidates may be made aware of a given recruiter's need. Secondly, to the extent that job availability determines labor supply, the publicizing of a vacancy can actually bring persons into the market who had not previously considered changing jobs. In the college teaching profession, where overt job-seeking is condemned and many professors prefer to remain at the fringes of the market, job availability is a particularly important lure to potential supply. The publicizing of a vacancy is especially important when an IHE does not need to be overly selective. At the fringes of labor supply are many individuals who want to teach in college but who feel they are not qualified. They may not have earned their Ph.D.'s and may think that a good job cannot be found without the degree. They may be able to work only part-time and believe that no part-time teaching jobs are available. They may be teaching at the high school level, though they have a master's degree, and have never seriously assessed their qualifications for college teaching.[2]

Finally, recruitment may, after a candidate is located, increase the likelihood that a given candidate will accept an offer that is extended. By paying for a trip to the campus, exposing the candidate to the most desirable living arrangements in the community, wineing and dining in a royal fashion, an employer may place a job of given qualities in a more favorable light. When a candidate learns more about the less measurable qualities of a job opportunity, such as congeniality of colleagues, he may consider them more heavily in his decision.

That over one-fourth of all newly hired professors do not seek their jobs in any way indicates that recruitment is common. Jobs often seek candidates. The marginal costs of recruitment are evidently often less than the benefits derived from an extension of the hunt on the part of the employer.

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[2] See Frank G. Lankard, "The Selection of Faculty Members," in Problems of Faculty Personnel (ed. John Dale Russell; Proceedings of the Institute for Administrative Officers of Higher Institutions; 1964) and Eugene W. Dils, Eleanor F. Dolan, and Richard G. Axt, "What Sources and Techniques Should be Utilized in the Recruitment of College Teachers, and What Methods of Retention Should Be Employed?", Current Issues in Higher Education (Washington, D.C.: Association for Higher Education, N.E.A., 1958), pp. 183-191.

If extensive recruitment fails to solve a staff shortage, there are other alternatives.

Lower hiring standards. Academic manpower is not homogeneous. Some professors are more productive and more prestigious than others. By lowering hiring standards, it is possible to increase the number of persons supplied to an institution without changing the rate of remuneration. IHE's with limited funds, faced with the necessity of placing teachers in front of already admitted students, find that quality deterioration is a solution to their problem, though an imperfect one. One of the great advantages of quality deterioration is that it is relatively inconspicuous, both to students and to fellow faculty members. Moreover, it is more politic to overpay an underqualified new teacher than it is to pay a salary higher than is earned by professors currently on campus to a new man of equal quality.[3]

Lowering quality standards is almost certainly the most frequent response of college recruiters frustrated in their attempts to attract high-talent faculty. Ray Maul in his study of the demand and supply of faculty for the N.E.A. states his observations in no uncertain terms:

> Regardless of the quality of all vacancies ...employing officials in all types of universities and colleges have been forced to condone the acceptance of many candidates with severely limited preparation... [thus paying for the]strong urge to staff the classrooms, even at the cost of desired quality.[4]

Though excess demand is a condition of the entire labor market in academia, it is more prevalent in sub-markets. For example, the lower quality schools face a much graver situation than the higher quality schools, as the higher quality schools have more money to bid supply away, as well as the non-monetary prestige value. Thus lower quality schools resort more frequently and extensively to practices such as quality deterioration. The lower quality IHE's sacrifice quality for quantity by hiring relatively fewer experienced professors (refer to Table 1) and fewer Ph.D.'s. In 1964, two-thirds of new faculty hired by the poorest schools were without doctor's degrees, whereas the top schools, in less of a bind, maintained a higher quality of new hirees, requiring that 71% of them have their Ph.D.'s (Table 2). But this is not the entire picture, for even the top quality schools were reducing the quality of their supply in response to excess demand, as they had formerly been able to require that 76% of their faculty have Ph.D.'s.

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[3] Lowering of hiring standards is a common method of increasing supply as predicted by Reder and as cited by Lester, McCormick and Palmer. It is often cheaper for a firm to lower the quality of the labor force hired than to raise wage rates, especially if the supply of labor at the previous quality is inelastic as it is in the short-run in academic labor markets. Melvin W. Reder, "The Theory of Occupational Wage Differentials," American Economic Review, vol. 45 (December, 1955), pp. 833-853. Gladys L. Palmer, Labor Mobility in Six Cities (New York: Social Science Research Council, 1954), pp. 99-100. Brian McCormick, "Labor Hiring Policies and Monopolistic Competition Theory," Quarterly Journal of Economics, vol. 73 (November, 1959), pp. 607-618. Richard A. Lester, Adjustments to Labor Shortages (Princeton: Industrial Relations Section, Princeton University, 1955), pp. 52-55.

[4] National Education Association, Research Division, Teacher Supply and Demand in Universities, Colleges and Junior

Table 2. Percentage of New Faculty with Doctorate, by Quality of School*

QUALITY OF SCHOOL	PERCENTAGE OF DOCTORATES^s
0 - 20%	71%
20% - 40%	54
40% - 60%	53
60% - 80%	40
80% - 100%	32

Source: Survey data and Prestige Index (explained in appendix).
*/ The percentage of Ph.D.'s on the faculty is one of the seven variables used to calculate the Prestige Index. Therefore, it is not surprising to learn that "Prestige" and "Percentage of Faculty with Ph.D.'s" are positively related. What is surprising is the strength of the relationship.
s/ means that differences are significant by chi square at .05.

Colleges, 1961-62 and 1962-63 ("Higher Education Series: Research Report 1963-R3"; Washington, D.C.: N.E.A., 1963), p. 24.

The greatest compromises must be made in those disciplines where faculty are most scarce. In all disciplines the poorer

Table 3. Percentage of Doctorates Hired by Top Schools Versus Bottom Schools, by Extent of Shortage

SCARCITY	PERCENTAGE OF DOCTORATES: (1) TOP 20% SCHOOL	(2) BOTTOM 20% SCHOOL	(3) RATIO OF (2) TO (1)^s
Excess Demand Disciplines	87%	31%	.36
Neutral Disciplines	75	31	.41
Excess Supply Disciplines	55	31	.56

Source: Survey data, Shortage Index, and Prestige Index (explained in appendix).
s/ means differences are significant by chi-square at .05.

schools draw fewer Ph.D.'s than the good ones. But in the areas of manpower surplus such as history and English the disparity is not nearly as large as in fields such as mathematics and physics where Ph.D.'s are very scarce. In the excess supply disciplines the poor schools contract, in relative terms, 56% as many Ph.D.'s as the good ones, but in the disciplines of greatest shortage the poor schools hire only 36% as many Ph.D.'s.

Regardless of the discipline of the vacancy, there is a noticeable tendency to be less particular about who is hired as the days approach September and the beginning of a new term. Recruiters who ask for a Ph.D. in November accept a "near Ph.D." in January, a good M.A. holder in March, any M.A. in June, and if the position is still unfilled in the late days of August, a candidate for the M.A. degree is sought eagerly. Whereas nearly one-half of all newly hired faculty hold Ph.D.'s, of those hired in late summer and early fall only one-fourth have their doctoral degrees. (Table 4) In the months immediately prior to the opening of the school IHE's seem more willing to raid teaching staff from lower eschelon schools, to hire retired professors, to accept one year appointees, to negotiate part-time positions, and in general to hire from the non-traditional pools of labor that are not drawn on so heavily during the earlier part of the season.[5]

Table 4. Quality of Newly Hired Faculty, by Month Contracted

CHARACTERISTICS OF CANDIDATES	PERCENTAGE OF AUGUST-SEPTEMBER HIRES	PERCENTAGE OF ALL HIRES
Holders of Doctorate	26%	46%
Teaching in Higher Education Last Year	20	32
Teaching in Primary or Secondary Education Last Year	16	10
One Year Appointment	50	15
Retired	2	1

Source: Survey data.

INCREASE REMUNERATION

As noted earlier in this chapter, one of the recourses that a firm has when faced with shortages in the labor markets is to take action to move along the supply curve. This is accomplished by increasing the perceived rate of remuneration (from the supplier's point of view). In most cases this also entails increased labor costs (from the employer's point of view). Actions which would accomplish this fall into two broad classifications: actions which raise remuneration in monetary terms, and those which increase net attractiveness in non-monetary ways.

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[5] The better IHE's seemingly avoid the late summer panic by either hiring earlier in the season or by delaying the hire for

Salary. Since World War II, as noted in Chapter 5, virtually all IHE's have acted to decrease the financial sacrifices required of those who choose careers in college teaching, hoping to increase the number of persons entering the profession. For this reason, they have increased salaries.

This is a common response to staff shortages. Higher salaries allow IHE's to move to higher price-quantity relationships and thereby increase their chances of attracting a given desirable candidate. The adjustments that IHE's have made to relative scarcities have brought into being an academic salary structure that cannot be explained except as a response to shortage. As noted elsewhere,[6] the poorer schools, realizing that they do not have the wherewithal to compete on salary at all ranks, concentrate their resources on hiring new men at the lowest ranks at the sacrifice of paying less than competitive salaries to already hired faculty in the senior positions. The resulting salary structure is one of narrow differentials and little prospect of advancement in salary for the newly hired.

Although the narrowing of salary structure is most evident in the poorer schools, the interdisciplinary salary differentials which reflect variations in shortage are common to all IHE's. In spite ot the strong metaphysical arguments for paying faculty at equal rates, regardless of discipline, most IHE's have bowed to the realities of the marketplace and are paying higher salaries to faculty in the disciplines where the shortages are most critical. If shortage is measured for each discipline by the percentage of all vacancies which remain unfilled, there is a significantly positive correlation between shortage and starting salary paid to new Ph.D.'s: i.e., starting salaries are significantly higher in the shortage disciplines. Measuring shortage by the rate of expansion in faculty positions, again the disciplines paying the highest starting salaries are ones in greatest excess demand.[7] There is no doubt that IHE's are responding to faculty shortage by paying higher salaries to those in the areas where they experience the greatest problems in recruitment.

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another year, for of all August-September contracts 38% are negotiated with the bottom 20% schools, another 29% with the 60% - 80% schools, and only 7% with the top 20% schools.

[6] See my The Market for College Teachers, p. 37.

[7] These tests were run by Spearman's Rank correlation on data contained in Table 3 in the Shortage Index section of the appendix.

Rank. What is true of salary is equally true of rank: IHE's are attempting to alleviate staff shortages by offering higher rank to persons in the excess demand disciplines. Of the Ph.D.'s hired directly out of graduate school, IHE's are able to hire 41% at the low rank of instructor in the surplus disciplines, compared to only 18% in the disciplines of excess demand (Table 5).

Table 5. Shortage and Rank, by Discipline

SHORTAGE	PERCENTAGE OF NEW PH.D.'S HIRED AS INSTRUCTOR
Excess Demand Disciplines	18%
Neutral Disciplines	34%
Excess Supply Disciplines	41%

Source: Survey data and Shortage Index (explained in the appendix).

To view the same phenomenon from a slightly different perspective, the average man in an excess demand discipline who moves to a new job and increases in rank to full professor is 39.0 years old, compared to the age of 41.4 for the average man in an excess supply field. Rank is used to attract faculty.[8]

The offering of higher rank is especially common to small colleges and the schools at the bottom of the educational hierarchy.[9] When a partial adjustment is made for the fact that the men hired by the poor schools are less qualified than those hired by the good ones by considering *only newly hired Ph.D.'s*, Table 6 shows that the poorer schools offer higher ranks. In spite of the fact that the poorer schools do more hiring at the bottom ranks, when they are hiring Ph.D.'s they offer higher ranks in order to get these candidates.

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[8] See Chapter 9 for analysis of these data.

[9] Small colleges often buy faculty with rank as indicated by the fact that non-public colleges with enrollments under 500 list 33.9% of their faculty as full professors while municipal universities list only 19.4% of their faculty at the top rank. "Instructional Staff Practices and Policies in Degree-Granting Institutions, 1953-54," National Education Association Research Bulletin , vol. 32 (December 1954), p. 163. Of course, this phenomenon might also reflect the fact that the larger schools are able to swell instructor ranks with graduate students.

Table 6. *Rank of Newly Hired Ph.D.'s, by Quality of School*

QUALITY OF SCHOOL	PERCENTAGE HIRED AS: INSTRUCTORS	ASSOCIATE OR FULL PROFESSORS
0-10%	16%	28%
10%-20%	11	28
20%-40%	10	28
40%-60%	9	26
60%-80%	8	32
80%-100%	8	40

Source: Survey data and Prestige Index (explained in appendix).

Rank is neither intercollegiate nor interdisciplinary, for rank measures not only status but also excess demand. Thus, the ranks in different IHE's are not comparable.[10] Rank is used as

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10. Proving the incomparability of rank among schools, the same man was frequently offered different ranks by different IHE's. As shown in the table below, 20% of those who accepted instructorships at their current schools were offered an assistant professorship at another school but rejected it.

Current Rank	Rank at Rejected Offers: Instr.	Asst.	Assoc.	Full
Instr.	78%	20%	1%	1%
Asst.	12	80	7	1
Assoc.	2	28	60	11
Full	2	10	19	69

Source: Survey data.

an adjustment to staff shortage.

Other aspects of net advantage. In attracting the needed manpower, an employer is not constrained to altering only the terms of employment. He may also make other types of changes in the job to increase the probability that a given individual will accept an offer tendered. In the long run, an IHE may work to improve the quality of its student body and to enhance its reputation in the eyes of the scholarly community. It may attempt to develop a stronger financial base so that items such as a more adequate office, a bigger library, better laboratory equipment, more secretarial assistance, and a more luxurious faculty club may be held out as inducements to all prospective faculty.

Though major changes cannot be wrought overnight, in the short run, an IHE may find it possible to offer some of these benefits to selected faculty. Special considerations may be granted to the faculty in shortest supply, even though resources may not permit the granting of these same considerations to all. For example, many IHE's make available a limited number of university-owned houses for rental, usually at a price below the market.[11] These houses may be allotted to the faculty in the shortage disciplines. Or, to a man who is especially reluctant to accept an offer, it may be possible to promise additions to the library in his field, the purchase of a desired piece of laboratory equipment, special secretarial assistance, or the payment of moving expenses.

Data gathered on the payment of moving expenses are consistent with the idea that employers are making such adjustments. Of the newly hired professors who switch locations and do not have their moves paid for by a third party (e.g., the military), the hiring IHE pays a part or all of the expenses for only 18% of those trained in excess supply disciplines.[12] In the shortage fields, market pressures force IHE's to pay for 27% of the moves.[13] Similar differences are apparent between big publishers, who are in relatively short supply, and non-publishers. To attract big publishers, IHE's paid moving expenses 43% of the time, compared to only 16% of the time for non-publishers.

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[11] See Mark H. Ingraham, The Outer Fringe (Madison: the University of Wisconsin Press, 1965), pp. 8-36.

[12] In about one-third of the instances where the IHE pays some of the moving expenses, it askes the candidate to share the burden.

[13] Another pressure influencing whether the IHE pays moving expenses is need. When moving expenses are likely to be higher, the IHE is more likely to share in the expense. For

Still another method of adjusting to the conditions of the market is to reduce teaching loads so as to make jobs more attractive where supply is the scarcest. As expected, IHE's offer the lowest teaching loads to persons newly hired into shortage positions. In the excess demand disciplines, the mean teaching load assigned to a newly hired faculty member is approximately 9 hours. The load is over 11 hours in the areas of relative surplus.[14]

Thus, in both of the areas where data are available, evidence supports the hypothesis that IHE's are adjusting to manpower shortage by granting special dispensations to those persons in greatest shortage. It seems reasonable to expect that the same people are receiving incremental adjustments in some of the less measurable aspects of net advantage.

SUMMARY

A firm faced with the shortage of one of its inputs has many courses of action open to it. Viewed in the light of economic theory, all courses affect the market via one of only three routes: decrease demand, increase supply, increase rate of remuneration.

IHE's react as other firms to shortages of their labor input. They limit output, alter their production function, extend their market by more efficient recruitment, increase salaries or other benefits offered in return for services rendered, or redefine supply by sacrificing quality for quantity.

The extent to which IHE's must pursue these courses of action varies with the size, quality, and financial strength of the institutions and with the different discipline markets they are dealing in. Lower quality schools more often must sweeten their bargains by offering higher salaries, and where they cannot, must turn to higher rank and to quality deterioration. In disciplines where excess demand is greatest even the better schools find they must enhance their offers with paid on-campus interviews, contributions to moving costs, lower teaching loads, higher ranks, or relaxation of quality criteria.

In short, institutions of higher learning respond to conditions of the market in their hiring practices--offering better terms where resources are scarcest, lowering quality standards to increase supply, or reducing their demands by making more efficient use of their scarcest resources.

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example, IHE's pay for the moves of those "married with children" five times as frequently as "single." Of those who move over 1,000 miles, 17% have their expenses paid, compared to only 7% moving less than 50 miles. Persons moving to full professorships have their way paid 25% of the time, contrasted to only 11% for instructorships.

[14] See Chapter 9 for an explanation of why there is not a greater difference.

BALKANIZATION
IN
THE
MARKET ....CHAPTER 7

The physical unity of "the labor market" is strictly a theoretical fetish. The realistic iconoclast that replaces it is the balkanized market. Balkanization means simply the dividing up of the market into smaller markets. Thus demand does not come into contact with all supply, nor does supply come into contact with every demander, but only with that segment which is feasible or relevant.[1]

CAUSES OF BALKANIZATION

Market divisions can arise naturally as a consequence of the functions of various jobs and the concomitant insubstitutability of labor. If the DuPont Company were in need of a product research analyst, it would consider qualified chemists as supply, but not truck drivers. On the other hand, if the need were for a custodial man, the firm could consider truck drivers for the position.[2]

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[1] For a more complete discussion of balkanization, particularly the institutional variety, see Clark Kerr's "The Balkanization of Labor Markets," in E. Wright Bakke (ed.), Labor Mobility and Economic Opportunity, (N. Y.: John Wiley and Sons, Inc., 1954).

[2] The truck drivers, however, may not make themselves available.

The market may also be divided by institutional factors. Closed shop unions are an obvious example of this type of factor, since under those conditions the only source of supply of labor available to a firm is union members. Seniority provisions are another such constraint, for the relevant supply to the more senior positions in some unionized firms are only those who have accumulated years of service with a company.

The market is not a unity because both the demand and supply choose to limit their participation. These limitations arise from economic and non-economic constraints and preferences. Consumer economics can provide the clearest example of these limitations. Any consumer is subject to a budget constraint and will thus shop at stores in his price range. Among these stores, however, he may discriminate on the basis of location, the attitude of the sales clerks or some other psychic preferences. A labor market functions in the same way. An employee or an employer cannot afford to look everywhere for a job or an employee: the gains in income or in productivity must outweigh the costs. The search is thus limited to a feasible area, a limited number of people and places. Added to this economic constraint, the individual may have preferences with regard to location, outside activity or the type of workers with which he will be employed.

Similarly, the employer may hire only a certain type of worker. These preferences will thus limit the markets being considered by the participants.

THE ACADEMIC LABOR MARKET

In common with all markets, the academic labor market is balkanized by economic, institutional, and personal preference factors. The same qualifications and delineations that apply to consumer product markets and blue collar worker labor markets are applicable to this market for professional manpower.

1. Subject-matter specialties, for example, differentiate supply. Physicists and historians are not completely substitutable and will therefore rarely compete for the same jobs. Even within the history area, experts in European history will be considered for jobs for which American historians are irrelevant supply.

2. Relevant supply is also constrained by institutional provisions such as anti-pirating agreements among similarly situated demanders, anti-inbreeding traditions, the traditions of promotion from within, and the avoidance of hiring too many faculty members with similar graduate training.

3. Employers' ability to pay also limits relevant supply. The supply curve of labor to a college is upward sloping in the sense that if the college has the wherewithal to pay higher salaries, it will be able to draw more manpower. Graduate trained personnel will be attracted from other institutions of

higher education and from industry and government. Since only the better financed schools such as Harvard and Duke are able to bid for high-priced supply, the top talent is not relevant supply to the more poorly financed schools, except for special situations.

4. The breadth of academic labor markets also means that the costs of communication and transportation divide markets. Without detailing conditions, an individual cannot afford to travel to every convention or to every campus to look for and at jobs.

5. Personal preferences are another dividing factor in academic labor markets. Hirers may prefer to consider only candidates with a given religious outlook, candidates of the same sex as the students, white candidates, married candidates (especially avoiding those separated or divorced), or alumni and alumnae. The candidates themselves may choose to teach only in large metropolitan areas or college towns, near their graduate schools, in a "desirable" climate, at an up-and-coming college, at a college which emphasizes a particular philosophy of life or a particular religious point of view, or at a school where the students are unusually talented.

Though bilateral monopolies of the automobile industry genus which define the rules, restrict entry and exit, and define areas of competition are not characteristic of academia, the academic market is nonetheless divided. The task of subsequent chapters is to validate or disprove the existence of such balkanization.

CONSEQUENCES TO EMPLOYER

Whatever the reasons may be for limited participation, the resultant divisions of the market provide benefits and costs to the participants.

If an employer is capable of favorably altering the composition of his final product by altering his production function, he will benefit by the divided market. He can thereby use more of the factor which is available in a market with excess supply. If a university can alter its curriculum without losing its student body and without losing any prestige, it will reduce operating costs by hiring professors in fields which have excess supply, rather than offering courses in scarcity fields such as nuclear physics.

If factors are substitutable but are available in distinct markets, an employer will gain by hiring in the cheaper market. If the factors are not perfectly substitutable, but can be used at other positions, the firm will hire in the cheaper market so long as the loss in productivity does not exceed the savings in cost. Thus the $MPP_a < MPP_b$ but the $P_a < P_b$ so that $\frac{MPP_a}{P_a} > \frac{MPP_b}{P_b}$, even if a is used at b's position.

If a university can hire an expert in French Renaissance Literature at a lower salary than a skilled sociologist, it may do so even if the need is for someone to teach a course in sociology. The productivity of the literature expert may be less than that of the sociologist, but it may not be so much less as to offset the savings in cost.

Another benefit from balkanized markets is a reduction of work for the employer: there are fewer contacts to make, fewer applications to process (as a result of many professors' recognition that they are unqualified or in some other way ineligible for the positions), and fewer campus interviews to finance. This work reduction in turn results in decreased costs of hiring, increased knowledge of a particular market.

But knowledge of the entire market is decreased. At the same time, fewer candidates will be considered and the possibility of overlooking the most productive prospect is increased. In a divided market employer horizons are necessarily and undesirably constrained. Selectivity is reduced.

CONSEQUENCES TO THE EMPLOYEE

Balkanization involves benefits and costs for employees as well as employers. The division of markets discriminates against good candidates and those in sub-markets characterized by excess supply while benefiting poorer candidates and those in markets characterized by excess demand. When the markets are undivided, the best candidate will get the best job--for employers are free to examine the entire field and to choose from a wide range of supply. When markets are divided, however, the employer is not exposed to some segments of supply. He may not be exposed to the best candidates and, as a result, the candidacy of the second best may be enchanced and he may get the best job. The best candidate may get the second or third best job.[3]

For the physicist (and others in short supply) balkanization means higher pay. For employers are unable to substitute low paid musicians (and others in excess supply) but instead are forced to bid up the wage in order to attract one of the scarce physicists. Employers are unable to dissipate their excess demand, except by moving to higher price-quantity relationships. By the same token, the musicians are worse off

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3. A qualified but inferior professor may thus gain a position more easily at a more prestigious institution because he is one of only a few known candidates. A denominational school may hire an inferior professor if he is of that religion and his only substitute is of another faith.

because they are unable to benefit from a "spill-over" of the demand resulting from the scarcity of physicists.

CONSEQUENCES TO SOCIETY

For the purpose of evaluating societal effects, it is helpful to dichotomize market divisions. On the one hand, divisions exist within markets for essentially homogeneous inputs. By definition, two inputs are "homogeneous" if they have equal marginal physical products and are fully substitutable for each other in production functions. The first category of balkanizations implies that, even though two college teachers would be equally productive, they do not receive equal consideration. For example, a given male and a given female candidate may be equally good but an employer chooses to consider only the male. Another example: two candidates may be equally good but the employer from the West coast may never find the candidate who is currently teaching at a small Northeastern college.

On the other hand, divisions exist among markets for essentially heterogeneous inputs. Two college teachers are not given equal consideration because they are unequal. They have substantially different abilities and thus promise substantially different marginal productivities. Here there are two markets, not one market divided. For example, although both physicists and musicologists are college teachers, they offer substantially different types of input to their employers and are, therefore, to be classed in different markets. Another example would be researchers and teachers.

Only intra-market divisions, the first category, can be conclusively shown to be costly to society. Inter-market divisions give rise to costs but also to benefits. And, even the intra-market divisions may sometimes be justified according to optimal resource allocation.

Intra-market divisions are costly because the employer who is willing to offer the best terms will often hire less than the most productive professor available at the terms. The best-paying employer can offer better terms than anyone else because he anticipates the highest return on the output produced by the labor on which he is bidding. The college whose marginal revenue product is greatest will offer the greatest wage, but the most productive professors often will not be located at the IHE's where they would make the greatest contribution to society. Some of the lesser qualified professors will be receiving "economic rents" which are undeserved and unnecessary. And some of the more qualified, because of balkanization, will not find the jobs in which they are needed most. Professors will not be paid according to their contributions to society, even as valued in the marketplace. In other words, if the less qualified but better paid professor and the more qualified but poorer paid professor could switch positions, the value product of society could be increased.

Because the valuation of the products of institutions of higher education presents many problems and requires a series of value judgments, the assessment of the seriousness of balkanizations of the intra-market type is extremely difficult. In fact, we can do little more than note that such balkanizations exist and, from this, infer that societal optimums are not achieved. This is part of the task of immediately subsequent chapters.

It is not correct, however, to reason that the very existence of balkanizations, even those within markets, is proof that a societal optimum has not been achieved. For _if_ exogeneously imposed conditions give rise to costs of moving input (professors) among sub-markets (e.g., transportation costs among various parts of the country), the cost of moving the input may be greater than the savings in costs resulting from the more desirable distribution. The increased productivity of the more desirably located professor may not be sufficient to offset the cost of getting him there. It is true that balkanizations are bad, but it may be more costly to society to eliminate these divisions than to allow them to stand.

On the other hand, many of the balkanizations which we shall find in academic labor markets do not result from the high costs of moving professors among markets, but are instead rather arbitrary divisions inposed by the personal preferences of individuals and institutions. These balkanizations definitely do cost society. That women are discriminated against by some academic employers represents such a division. That only slightly flexible rules govern the rate of promotion and the granting of tenure also divides markets in essentially undesirable ways. Lines of promotion based upon factors other than productivity also involve costs to society. Poor systems of communication, especially among the smaller, less prestigious schools, limit the horizons of choice for both candidates and employers. In addition, the fact that some colleges consider only members of certain religious faiths to teach courses in which religious faith is essentially irrelevant is also costly to society. In each of these instances, labor is essentially homogeneous and the movement of labor among the sub-markets is essentially costless. However, the desired movement is not occuring because of some primarily non-economic reason. We cannot judge the justification of the non-economic reason, but there is no doubt that the resulting allocation of inputs is less than economically optimal as a result of the division.

Inter-market divisions give rise to the same types of costs as intra-market ones. But, unlike intra-market movement, the costs to society of moving inputs among markets often outweigh the advantages. To move a man from the physics market to the musicology market requires training the physicist to be a musicologist, a not insignificant allocation of resources, or to allow the musicologist to teach physics inadequately.

Moreover, the basic cause of inter-market divisions often gives rise to positive benefits. Specialization, or the heterogeneity of labor, causes the disciplinary balkanization of academic labor markets, and much can be said for specialization. Through specialization the educational time and cost may be reduced, for the expert need not be trained to equal levels of competency in all fields of knowledge. Specialization may allow the concentration of laboratory facilities required by the specialty at a few universities, in preference to partial facilities at many locations. Similar advantages may apply to the concentration of library facilities. Through disciplinary specialization it may well be possible to reduce the cost of the final educational products and thereby benefit society. Of course, the same benefits will result from other types of specialization which yield the same, or a greater, marginal product at a lower cost. The dividing of professors into teachers and researchers may well be such a specialization.[4]

Thus, from a societal viewpoint, market divisions are both good and bad. In general, the divisions which exist between the labor markets for dissimilar college teachers are beneficial, but the balkanizations within labor markets, with a few exceptions, are detrimental. In the next chapters, the various types of balkanizations and their effects will be studied in detail.

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[4] There is a danger of too much specialization. A man trained only in physics may not be able to appreciate the social consequences of his work, and the teachers may become sterile without pursuing some research.

3

A BABEL

OF SPECIALISTS.......CHAPTER 8

Today there is, and necessarily so, a predominance of hyper-specialists. People are not concerned with only one field such as science, nor with only one subject matter, such as physics. Today people are specialists in thermodynamics, not physics; inorganic catalysts, not chemistry. The substitutability of disciplines is asymptotically approaching zero.

DESIRABILITY OF SPECIALIZATION

This insubstitutability places strains upon the IHE administrators, particularly those at impoverished schools, who must cope with the changing demands and staff courses in each field. Insubstitutability makes it increasingly difficult to maintain a familial unity type of atmosphere often desired at small colleges. These specialists are often in closer contact with colleagues at other institutions who specialize in the same field, than with colleagues in other departments at their own schools.

Yet, this specialization is vital and advantageous. The faculty personnel are the keystone to success in every industrial field. The successful participants in non-academic life have been trained predominantly by college faculty. With the rapidly increasing state of knowledge, it is physically impossible for an individual to keep abreast of more than one small area.[1] If the faculty are not specialists, are not on top of their subject matter, their students will enter their respective professions less qualified than they might have.

Further advances in knowledge will come about more easily if specialization occurs, for the individuals will be more aware of the problems which need solutions. This is true in any field. The man on the assembly line responsible for installing steering wheels will generally know better how to improve his efficiency and the installation process, than the superintendent. How much more so must specialization provide insight to problems when the problems themselves are so obtuse. A chemical engineer will be familiar with the application of chemistry to solving practical problems. However, he can only work with the existing state of chemistry. He will be aware of needed improvements, but may not know the essential chemical changes required to provide improvement. The inorganic catalytic expert will be responsible for improving the "cracking" agents the engineer has to work with.

SUBSTITUTABILITY OF SPECIALISTS

To gain an indication of the extent of specialization in present-day academia, individuals were asked "Are you teaching in the same field as the one in which you received your highest degree?" and "Is your principal teaching assignment in the same field as your primary research interest?" The answers, summarized in Table 1, indicate that, although markets are balkanized, a substantial degree of substitutability does exist.

Table 1. Extent of Specialization

SUBJECT MATTER AREA	TEACHING IN TWO OR MORE AREAS	TEACHING IN AREA DIFFERENT THAN HIGHEST DEGREE
Narrowly Defined Areas (73 Disciplines)	21%	21%
Broadly Defined Areas (13 Subject Matter Areas)	5%	4%

Source: Survey data.

The answers reflect the fact that before a man becomes superspecialized he is usually required to obtain a general background in related disciplines. The American system of higher education is not producing narrow specialists who know only nuclear physics and know nothing about mathematics and chemistry. Most narrow specialists have a broadly based training so that they may teach in several areas when there are not sufficient demands to justify the allocation of all his teaching hours to courses in his narrow sub-specialty.

When subject matter areas are divided into 73 groups (e.g., bacteriology, biochemistry, religion and theology, economics, history), 21% of all newly employed teachers teach in more than one field and 21% have primary teaching responsibilities in a field other than their highest degree. Many physicists also teach a course in mathematics. French professors teach some Spanish. Clinical psychologists often offer a course in experimental psychology.

Substitutability is definitely limited, however. There is almost no substitution across broad subject matter areas.[2] (Refer to Table 1, row 2.) Persons trained in a social science discipline will often teach another social science subject, but rarely will they be involved with a course in the natural sciences or the fine arts. Virtually all substitution is within broad subject matter areas.

Moreover, the few exceptions to this general rule are not dictated by comparative scarcities. As stated above, it might be expected that musicologists (and others in excess supply) would be substituted for physicists (and others in excess demand) by the economy-minded employer. This activity may well be occurring--but it is pursued by the deletion of courses in physics and the addition of music courses, not by the hiring of a musicologist to teach physics. The few substitutions

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1. Although a residual estimate, increases in knowledge were responsible for 20% of the growth of Gross National Product from 1929-1957. Considering that the Gross National Product more than doubled in this period, the growth of knowledge must be considerable. Edward Denison's, The Sources of Economic Growth in the United States and the Alternatives Before Us ("Supplementary Paper No. 13," Washington, D. C.: The Committee for Economic Development, 1962), p. 266 and chapter 21.

2. Broad subject matter areas are groupings of the 73 individual disciplines into 13 categories: biological sciences, business and commerce, education, engineering, English and journalism, fine arts, foreign languages and literature, health fields, physical sciences, psychology, religion and philosophy, social sciences, and all others.

that do occur between broad subject matter areas are typically the result of the incorrect compartmentalization of knowledge and interests. Some scholar-specialists concentrate upon a given genera of problems, drawing techniques from all disciplines as necessary. Thus, there are specialists in ancient history who may be found teaching in the departments of both classics and history, specialists in the problems of home and family who may be centered in the home economics department but teaching a course in the sociology of family life, specialists in the teaching of English at the primary and secondary school levels who may have responsibility for both English and education courses, and so forth. A detailed analysis of the few persons who are teaching in several broad subject matter areas reveals that they are not generalists, as it at first appears, but that they are problem-oriented specialists. Thus, we find that virtually all college faculty are specialists, substitutable only within broad subject matter areas. Markets are deeply balkanized by discipline.

The only indication that the extent of specialization is dependent upon market conditions is the greater splintering of the responsibilities of those hired in the excess demand areas. Within the categories of engineering, biological sciences, and physical sciences--which include many shortage disciplines--a man is more likely to be teaching in several of the 73 disciplines (e.g., mechanical and civil engineering) than within the categories of humanties or social sciences.[3] This may simply reflect differences in the structure of disciplines: for example, that there are fewer courses to offer in physics than in English. But there is at least a suggestion that some IHE's may be reducing the number of course offerings in the scarcity areas so that one professor may cover all the related courses in several disciplines. Knowing that both physicists and mathematicians are in short supply, the data suggest that some IHE's are hiring one man to cover both fields and keeping the course offerings to a level where this is possible. The IHE's are not, however, hiring linguists to teach physics.

DIFFERENCES IN MARKET BEHAVIOR

Although there is a modest degree of substitutability within broadly defined subject matter areas and between narrowly defined ones, the barriers between even the narrowly defined disciplines are strong enough to give rise to substantially different market conditions. For each of 32 disciplines, these differences are summarized in one table which appears in the appendix. Since many of the differences have been highlighted at other points in this report, it will suffice to cite only a few illustrations. To the average new Ph.D.'s without teaching experience, $9,800 is paid electrical engineers whereas historians receive only $7,200. Economists draw $8,350; French Ph.D.'s only $7,350. Eighty-five percent of the new Ph.D. chemists and sociologists are appointed at an academic rank above instructor but less than two-thirds of the new Ph.D.'s in history, French, and English are. The average teaching load for newly hired professors (not just emerging Ph.D.'s) is less than 9 hours in chemistry, biochemistry, civil and electrical engineering, and agriculture whereas it is more than 11 hours in elementary education, accounting, art, music, French, and classical literature. These differences are in themselves evidence that balkanization does exist. For if balkanization did not exist, the excess supply in one sub-sector would move to meet the demand in another and the flow would continue until the two market rates became equal. The excess demands in shortage areas are not being met by faculty trained in areas where professors are less scarce. The continued existence of differentials between markets indicates that barriers exist.

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[3] Education is a special case, where it is traditional to be trained in a specific subject matter such as English as well as in the methodology of teaching.

There are many other signs that the markets for various disciplines are substantially different. For example, consider the frequency of one-year appointments. In the fields of educational administration, French, and counseling and guidance, over one-fifth of the candidates expect to remain on their current jobs for one year only; these are primarily one year appointments. In contrast, less than one-twelfth of the appointments in secondary education, electrical and mechanical engineering, and physical education are for one year only.

Or, consider the importance of involuntary mobility in various markets. Here the tendency is for involuntary mobility to be greater in those disciplines where there is a relative surplus though the tendency is by no means decisive. The greatest involuntary mobility is in political science (32%) and civil engineering (31%), the least in elementary and secondary education (6%). There is also a tendency for persons in excess demand disciplines to receive more offers than those in areas of surplus, though again the tendency is not decisive. Selecting the most favorable disciplines to illustrate the point, at least half of the electrical engineers, physicists, economists, and mathematicians--all in excess demand--receive, on the average, one more job offer than musicologists and physical education teachers--groups that tend to be in surplus.

There are still other indications of differences among markets, though these differences do not conform to the expected relationships between the markets of excess demand and of excess supply.[4] For example, "reluctant maidens," defined as persons who do nothing to seek a job, are a far more important portion of supply in the disciplines that draw heavily upon primary-and-secondary school teachers, where many candidates do not realize that they have the opportunity of teaching at the college level until a specific contact by needy employers convinces them that they do. In each of the three subject matter areas that draw the greatest portion of supply from primary and secondary schools, (general biology, secondary education, and education services) reluctant maidens constitute over one-fifth of supply. Of the 32 disciplines considered, there are only two others, French and accounting, with such a large portion of reluctant maidens. To contrast, in the two largest engineering fields 93% of all jobs switchers actively search for new employment. It may well be that the differential rates of convention attendance explain the relative importance of reluctant maidens, for convention attendance is two-to-three times more frequent in

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4. Repeated attempts to explain the differentials in market behavior by dividing the disciplines into excess supply and excess demand have not produced any conclusive evidence of the expected usual relationships. The proof of such insignificant differences is seen in the table below which divides disciplines according to the Shortage Index explained in the appendix.

VARIABLE	EXCESS DEMAND DISCIPLINES	EXCESS SUPPLY DISCIPLINES
Average Number of Job Offers	2.3	2.1
Percentage of Involuntary Mobility	21%	24%
Average Age At Which Full Professor Achieved	39.0 yrs.	41.4 yrs.

One suggestion of such similarities is that all disciplines are confronted with excess demand, and rather than excess supply disciplines, there are only disciplines with relative excess demand.

education than in engineering. The informality of the convention setting may present opportunities to be contacted, opportunities to which engineers seldom expose themselves.

One of the greatest contrasts among markets is the importance of research and researching competence. Here there is a sharp dichotomization between the "data" disciplines, which emphasize research, and the "word" disciplines, where research is less important.[5] The attitudes of individuals within the disciplines are illustrative. When asked, "during a typical week do you spend more time 'teaching and counseling' or more time 'researching and writing,' or equal time at both?," more than one out of every eight chemists, physicists, biochemists, sociologists, and economists indicated "research and writing." In contrast, "teaching and counseling" was the option selected by only 1/16th of those trained in English, music, physical education, general biology, general zoology, and elementary education. In answer to another question, "Which of 17 factors were 'very important' in your job choice decision?," the research emphasis of the data disciplines is confirmed. In all of the physical and engineering sciences and in all of the biological sciences except the very general disciplines of general biology and general zoology, "research facilities" was mentioned more often than any other factor; whereas "research facilities" never ranked first among persons trained in the humanities and social sciences. Still another indication of the greater emphasis upon research in the data disciplines, as shown in Table 2: only 40% of those in data disciplines have not published, compared to 59% in the word disciplines.[6]

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[5] The disciplines are identified by group in Table 2.

[6] The publication habits of movers differ little from their more stable colleagues, when a comparison is made across disciplines. The COLFACS data, where the discipline groupings are identical to ours, are illustrative.

SUBJECT MATTER AREA	PERCENTAGE WITH ANY PUBLISHED ARTICLE
Biological Sciences	85%
Business and Commerce	50
Education and Related Fields	58
Engineering	61
English and Journalism	46
Fine Arts	36
Foreign Language & Literature	46
Health Fields	69
Mathematics	43
Physical Education	32
Physical Sciences	77
Psychology	74
Religion and Philosophy	52
Social Sciences	61

Source: Kenneth G. Nelson, "Professional Publications of Teaching Faculty in Higher Education," A Paper Presented at the American Association for Advancement of Science, December 27,1964.

Table 2. Emphasis Upon Research in Data Versus Word Disciplines

VARIABLE	DATA FIELDS*	WORD FIELDS*
Spend More Time Researching and Writing[s]	13%	6%
Published Something[s]	60%	41%
Research Facilities Are "Very Important" Factor in Job Choice More Than Any Other Factor	all fields	no fields
Average Teaching Load (Hours)[s]	9.5	11.2
Teaching and Researching in Same Fields[s]	93%	83%
Holding Ph.D.'s[s]	50%	17%
Last year's occupation outside academic[s]	29%	8%

Source: Survey data.

*/Data disciplines: civil engineering, mechanical engineering, electrical engineering, mathematics, physics, chemistry, earth science and geology, and biochemistry.
Word disciplines: art, secondary education, physical education, music, English, French, and educational services.

s/means that difference is statistically significant by chi-square at .05 level of confidence.

In the data disciplines, where research training and experience are more directly relevant to the learning process, the Ph.D. degree is expected. Over three-fifths of all movers in the markets for biochemists, electrical engineers, civil engineers, chemists, physicists, and clinical psychologists have their Ph.D.'s. In these same disciplines, in over 50% of the cases, the Ph.D. is in hand before leaving graduate school. The contrast between these disciplines and the "word" areas of English, art, music, and physical education--where less than

30% of all movers and less than 20% of last year's students have the degree--emphasizes the very different compositions of supply.

What at first seems surprising is that the very markets in which employers are most adamant about maintaining quality by hiring only Ph.D.'s are the ones where the pressures to compromise standards are the greatest, where the faculty shortages are the most severe.[7] Here cause and effect are curiously intermingled. The most logical explanation is that the Ph.D. is regarded as essential in the data disciplines, because research ability is so important in the learning process. The Ph.D. is essential and the compromising of standards in these research oriented disciplines will result in a sharp decrease in the quality of output. The greater scarcity in the data disciplines is dictated by the lesser substitutability of non-Ph.D.'s for Ph.D.'s in these same areas. At the same time, individuals, contemplating careers in several academic disciplines, are not responding to the higher remunerations offered in the data disciplines because the barriers to entry into the market (i.e., the receipt of a Ph.D.) are greater. One of the causes of excess demand is the high training costs involved in entering the data disciplines.

SUMMARY

The evidence is clear and conclusive. Though there is some substitutability of professorial manpower within broad subject matter areas (e.g., natural sciences), the low coefficients of substitutability limit flows of manpower among markets and give rise to the continuation of significant differences in levels of remuneration. The behavior in the markets for various disciplinary specialists is vastly different is strong indication that each field represents a separate market and that the academic labor market does not exist.

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7. Even though IHE's hire greater percentages of non-academicians in these fields, it does not represent a decrease in the quality of the individuals hired. See Chapter 13.

SMALL COLLEGES VERSUS LARGE UNIVERSITIES........CHAPTER 9

Individuals and firms tend to be goal oriented. Laborers, for example, attempt to maximize income by maximizing their productivity. Similarly, firms strive to enlarge profits by maximizing total revenue and minimizing total costs.

Wherever an individual has some flexibility of job choice, or some bargaining power, he can increase his productivity and his income: for example, by selecting an occupation most suited to his abilities, by seeking a job with a high amount of capital relative to labor, or by accepting working conditions conducive to increased productivity. Consider an illustration. A man only 5 feet tall would not consider playing professional basketball in almost all cases, but he might play professional golf. This man might realize that he could not compete successfully on the golf circuit but that he had unusual skills at teaching the game to others. He could accept a position as a teaching professional at a country club. His choice of country clubs would depend upon a number of factors-- among them personality, ability, the type of course, and the membership of the club. If he excels in communicating the game's finer points to women, he would be more productive at a course used by many women. Many variables could be introduced, all of which would affect his income and his choice of courses.

Similarly, a firm accomplishes its maximization by optimally allocating resources so as to equalize the marginal products of the factors in their various uses. Its total revenue is the product of the physical output and price. Price is determined by supply and demand, which in turn is influenced by the quality of the product, its utility, and any product differentiation the firm can instill in the minds of the consumers. Established firms can usually be more sure of their markets, but they do not want to destroy the faith of customers. They will insist that production maintain a certain quality standard and that salesman treat customers in the manner to which they are accustomed. Firms will thus pursue certain hiring methods in light of their traditional marketing approach. A discount store can afford to hire inexperienced personnel, because its customer attraction depends on price savings and not on service. On the other hand, a retail store may require skilled salesmen in order to assure success in its competition with similar stores. Chances of success will be increased if the man is experienced in handling customers of a certain income level and trained in selling a certain type of commodity.

Additionally, firms have relations to their immediate environments. A small town firm will be concerned not only with production success, but also in maintaining community prestige. Consequently, hiring preferences will be given to local workers, as well as to administrators skilled in the field of local public relations. These men will most likely be located at similar type firms or in local government. Larger firms are maintaining national and international prestige, while concomitantly striving for the top. Their hirings will predominantly be the most qualified man available for each position, regardless of his present location, though such skills will most likely be located at other large corporations or in training in a highly recognized program.

THE ACADEMIC WORLD

In the knowledge industry, IHE's are firms and professors are laborers. Among both the individuals and IHE's ~~there will~~ be various abilities, preferences, and objectives.

By virtue of incomplete substitutability and the general shortage of college faculty , each professor is endowed with certain bargaining powers. These powers will vary among individuals, for some are more capable and in different areas than others. Realizing these limitations, some professors will avoid competing with the great men in their fields for certain positions and, by the same token, others will not make themselves available to schools which would underutilize their abilities. Each professor should choose that school which allows him to maximize his productivity by providing him with the facilities most suited to his work, be it teaching, researching or some combination of the two.[1]

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[1] This idea of productivity maximization is not contrary to the notion of net advantage postulated in the theory of job choice. Net advantage is predominantly the price the IHE will offer the man and any non-monetary inducements as envisioned by

If a man prefers research or if his research productivity is greater than his teaching productivity, he will desire a position at a school which respects his preferences for research and which provides the opportunity and facilities for accomplishing his work. He will be looking for an IHE which provides a light teaching load compatible with his research (e.g., graduate courses in his area of research). He will benefit from good library facilities and clerical help, both of which will vary in quality and quantity among the various types of schools. If a man prefers teaching, he will search for positions which will not emphasize publication. Since he will be spending most of his time teaching, the courses to be taught, the quality of students, classroom facilities will concern him most.

These divergent aims of supply find suitable outlets among the various IHE's. Two-year colleges are often like small town firms in that they have a concern for the local people. They produce many future local leaders and offer evening courses for the entire community. Emphasis is on teaching.

Four-year IHE's are also affiliated with towns and have community relations to consider. In the colleges, as contrasted to universities, again emphasis is on teaching, although research is not unknown. However, research conducted by college faculty is generally on a smaller scale than at universities. With the emphasis on teaching and with the student body typically small, colleges encourage closer relationships in the hope of stimulating more learning. Additionally, the student body at a college is likely to be more homogeneous than that of a university, and colleges will in some manner be catering to certain classes of students. The demands of colleges are thus specific regarding the teaching ability and preferences of faculty.

At a university, the student body is typically large and encompasses a broad spectrum of students. There is a new emphasis upon the production of knowledge which goes beyond the mere transmission of it. Very large classes are more common. Impersonal education is often an evil necessitated by the pressures for research. Here research is pursued on a grand scale, involving corps of graduate assistants and highly specialized project directors.[2]

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the professor. The school will base its estimate of productivity on the man's past production, whereas the non-monetary measure is in part comprised of the facilities the school has to offer the man which are conducive to his work. If he intends to increase his future net advantage, he must increase his productivity. Productivity is a determinant of present net advantage while present net advantage will in part determine future productivity. The term, "productivity," is more applicable to the theory of this chapter, and is thus used.

2. Dr. Hugh Price, President of Ventura Junior College,

In pursuing these diverse objectives, IHE's, like firms, will be maximizers. They will not be profit seekers, but they will be goal oriented. Not only will they be attempting to maintain a certain size and quality, but they must be continually increasing their capacity to accomodate expanding enrollments and to enhance their stature so as to compete successfully for the resources needed in production.

In order to accomplish its goals, an IHE will search for those faculty members who will contribute most to its production. A business firm hires production workers skilled at running the firm's machinery and salesmen qualified to distribute its product. Likewise, an IHE will hire professors most compatible with its production function, namely those who have evidenced the capability of handling the students in the qualitative and quantitative manner the school desires as well as maintaining (if not increasing) the prestige of the school. IHE's of various sizes and types will demand faculty experienced at teaching a certain calibre student in certain ways.

BALKANIZATION BY SIZE OF SCHOOL[3]

Relative to smaller schools, the larger staff and budgets allow the larger IHE's to provide more elaborate research facilities in the form of larger libraries and better equipped laboratories and to hire the specialists who can make full use of the opportunities they provide. At the same time, once the larger schools make the investments necessary to develop top-notch research facilities, they have a vested interest in utilizing them. They must attract the staff to use the equipment.

Since research-emphasizing faculty are even more scarce than faculty in general (they represent only 9.4% of all movers), the larger schools are compelled to offer unusually attractive terms so that the research-oriented are not lost to the smaller schools where the facilities are not nearly so conducive to research. Because they are large, it is possible for these schools to promise specialized teaching schedules. As shown by Table 1, the man who moves to a large school is more likely

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presents the various objectives of the different levels of schools. "Expanding Resources for College Teaching," Reports of Committees and Conferences (Series 1, no. 60; Washington: ACE, October, 1956).

[3] This chapter is concerned only with the preferences of supply for schools of various sizes and general types. Variations for quality, sex, race, and religion are dealt with in separate chapters.

to be teaching in only one field and that field is more likely to be the one of his primary research interest. Moreover, the new faculty member at a large school is likely to be given more time for research, for he is on the average expected to be in the classroom approximately 3 fewer hours per week.

Table 1. Differences by Size of IHE*

TERMS APPLIED TO NEWLY HIRED FACULTY	SMALL IHE'S	MEDIUM IHE'S	LARGE IHE'S
Teaching in only one field	71%	78%	86%
Teaching and researching in the same field	80%	82%	88%
Average teaching load (in hours)	11.8	10.7	9.1
Mean Salary (last year's students)	$6550	$7000	$7350
Mean salary (last year's faculty)	$8050	$8400	$9550

Source: Survey data.
*/ Small IHE's: full-time enrollment less than 1000.
Medium IHE's: 1000-5000 students.
Large IHE's: over 5000 students.

The success of the large schools' campaign to hire a lion's share of the research-emphasizing professors is reflected by the fact that 60% of these professors are located at schools enrolling over 5000 students, and only 8% at small schools. Sixteen percent of the staff newly hired by large schools are research-oriented, compared to less than half this percentage by the middle-sized schools.

In addition to using lower teaching loads to attract more of the research oriented professors, the larger schools pay higher salaries: $7,350 to the emerging student compared to $6,550 paid by the IHE's with enrollments under 1000. Part of the salary differential is undoubtedly due to the fact that the larger schools are hiring a "higher quality" supply in the sense that a greater portion of the hirees hold Ph.D.'s, a greater portion have published, and so forth. But this does not excuse the difference, for it is precisely because the large schools require the Ph.D.'s, the specialists, that they must pay higher salaries. To say that large schools would not have to pay high salaries if they did not hire Ph.D.'s is to say that if large schools had the same demands as small schools they would be in the same market. The assertion is true but irrelevant. The fact is that large and small schools have different types of demand for faculty and that they operate in separate markets that are partially independent.

Table 2 illustrates this independence. There is a definite tendency for faculty to move between same-size schools: overall, 46% of all job switching faculty move between IHE's of the same size. Even though small colleges account for only 17% of all vacancies, 27% of last year's faculty leaving small colleges move to other small colleges. In contrast, only 15% of those leaving middle sized IHE's and 11% of those leaving large ones locate in small colleges. At the opposite end of the size spectrum, 52% of the experienced faculty coming from large schools move to another large school compared to only 20% of those coming from small schools. There is a clear preference to remain in the

Table 2. Faculty Mobility by Size of IHE'S*

SIZE OF NEW IHE**	SIZE OF IHE LEFT: SMALL	MEDIUM	LARGE
Small (17%)	27%	15%	11%
Medium (46%)	53	49	37
Large (37%)	20	37	52
TOTAL	100%	101%	100%

Source: Survey data.
*/ Same as Table 1.
**/ Figures in parentheses indicate the percentage of all new hirees made by each group.

"same size league." Whether the cause of the market balkanization is primarily due to the preferences of supply, desiring to remain in a similar setting, or the preferences of demand, desiring to hire manpower experienced in working in a similar production function, cannot be determined.

Not only is there balkanization along the lines of school size, but it gives rise to economic irrationality. Nine percent of those accepting jobs at smaller schools rejected higher salary offers from larger schools, and a different 7% go to larger schools at a sacrifice in salary.In both situations, over one-third of these rejections are of offers exceeding $2,500 more than the accepted salary.

BALKANIZATION BY TYPE OF IHE

The multicollinearity between size and type of institution is so great that independent discussion of the factors promises to be redundant. The larger institutions are usually universities; the smaller, usually colleges.[4] The exceptions are few.

The economic justifications for balkanization are, however, slightly different. In the case of large schools, we would expect research-oriented individuals to be hired, because it is possible for the large schools to invest in more capital, and it is desirable that the faculty make use of that capital. With universities, we would also expect a heavy research orientation, but not because the capital is available. The research orientation is a result of the type of output expected of universities: the production of knowledge as well as its distribution. Moreover, the knowledge that is distributed by universities is often of the more advanced, graduate level variety, which requires teachers who are actively researching in their fields. The objectives of colleges and universities differ even more than the objectives of large and small schools. Thus, we would expect that there is balkanization by type certainly, if there is balkanization by size of school. And there is.

As shown by Table 3, universities pay more for teaching fewer hours and more specialized subjects. These inducements bring 78% of the research-oriented to the universities. Moreover, they enable the universities, when recruiting newly emerging students, to hire from the best schools and avoid the poor ones. Whereas only 9% of the students hired by universities come from the bottom 40% of IHE's, 67% of the students hired by colleges come from the same source.

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[4] A university is defined as an IHE that offers the Ph.D. in one or more fields. A college is a 4-year IHE that does not offer the doctorate. And a junior college is a 2-year IHE.

Table 3. Differences by Type of IHE

TERMS APPLIED TO NEWLY HIRED FACULTY	COLLEGE	UNIVERSITY
Teaching in only one field	75%	85%
Teaching and researching in the same field	80%	86%
Average teaching load (in hours)	11.8	9.0
Mean salary (last year's students)	$6700	$7500
Mean salary (last year's faculty)	$8200	$9350

Source: Survey data.

The college and university markets are substantially different. Sixty-two percent of faculty moving between two IHE's move from college to college or from university to university; only 38% move from one type of institution to the other. (See Table 4.) Most definitely isolated are junior colleges. Only 5% of the faculty hired by 4-year IHE's comes from 2-year schools. Universities have almost no contact with the junior colleges, evidenced by the fact that they hire only 2% of their faculty from them. The market division between colleges and junior colleges is less rigid, with 8.5% of the newly hired college faculty members coming from 2-year IHE's. This division is, however, still definite.

The division between the 2-year and 4-year markets is further substantiated by the fact that only 6% of the supply that accept a 4-year IHE appointment have even one offer from a 2-year IHE.

Table 4. Faculty Mobility by Type of IHE

TYPE OF NEW IHE	TYPE OF IHE LEFT: COLLEGE	UNIVERSITY
College	57%	43%
University	34%	66%

Source: Survey data.

CONCLUSIONS

There are definite tendencies for supply to affiliate itself with certain types of institutions. Researchers prefer large universities, whereas teachers are inclined toward small colleges.

Not only are there close associations, but supply also shows a propensity to move among schools of similar sizes and types. Of the two categories, level orientation seems to be the most pronounced. These balkanizations are so strong that supply does not always conform to the economic assumption of rational behavior.

NATIONWIDE MARKETS.........CHAPTER 10

Previous studies have indicated that geographical boundaries are the most important determinants of labor markets.[1] These analyses have concentrated attention upon the unskilled and semi-skilled workers. Theoretically, the more skilled the worker the wider are his geographic bounds. With increasing skills, it becomes more advantageous for an employer to hire the individual at a distance and transport him, rather than to pay the costs of training. ~~The~~ primary factors operating for geographically limited markets are the classical maximization principle, ignorance of the market, and personal preferences. Since these are not entirely operative in the academic labor market, it is more national.

Any employer will extend his market only if the gain in value productivity exceeds the costs of searching and recruiting. Such productivity gains are slight in the case of the manual workers, for this is a group of homogeneously unskilled and semi-skilled factors. In contrast, the supply in the academic labor market is composed of heterogeneous individuals who are substantially non-substitutable. Schools stand to benefit by increasing their area of search.

Both markets are subject to market ignorance. Market expansion is dependent on the relation of expected gains and expected costs. A market is enlarged not only if the value of the expected gain increases, but also if the probability of attaining the gain increases. The probability of any gain at all is probably greater for academicians than for day laborers, for faculty are a scarcer resource and are better equipped to make a market search.

The supply of manual labor will likewise have little necessity for interregional moves. Within any given region there are many jobs from which to choose, since a broad range of employment opportunities is available locally. In the academic market, however, the demand for a specific type of professor may be limited so that within an entire region only one or two vacancies are pertinent. To extend the market to include a sufficient number of alternatives requires a nationwide perspective.

A NATIONAL MARKET

The aggregate data support the view that academic labor markets are not bounded by regions. In moving to new jobs 46.6% of the supply cross regional boundaries. Both of the largest groups in the market, last year's students and last year's faculty, evidence a nationwide orientation, which is even broader when the offers received as well as the jobs accepted are considered. Because last year's faculty are likely to have contacts more widely dispersed throughout the country and because students--desiring to remain close to their graduate schools to facilitate completion of their degrees and appreciating the greater bargaining strength of their scholastic backgrounds within the same region--are subject to marginal geographic constraints, we would expect veteran faculty to be more interregionally mobile. And they are. Of those veteran faculty voluntarily moving, 52% actually switch regions and an additional 20% have at least one serious offer from another region.[2] The corresponding percentages for students are considerably different (41% and 64%) with the percentage of interregional moves significantly lower.

The general absence of geographic boundaries is emphasized by noting the general willingness of supply to move great distances. The predominance of short distance tranfers that are typical of most labor markets is conspicuously absent. Twenty-six percent of the newly hired college teachers move over 1000 miles.[3] A total of 46% move over 500 miles.[4]

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[1] Cf., Lloyd Reynolds, The Structure of Labor Markets (N. Y.: Harper and Brothers, 1951).

[2] Only 40% of the involuntary movers switch regions, which suggests that this group has less perfect knowledge of the market and that involuntary movers must lower expectations.

[3] Of those who move over 1000 miles, 40% of the movement is to the Far West.

[4] Fourteen percent of the job changes are within the same specific location. Forty percent of these immobile job changes

Table 1. Regionalism of Acceptances and Offers, By Last Year's Activity

ACCEPTANCES AND OFFERS		PROFESSORS LAST YEAR	STUDENTS LAST YEAR
Acceptances:	Percentage Moving from One Region to Another[s]	50%	41%
Offers:	Percentage Having Concrete Offers That, If Accepted Would Have Involved Moving From One Region to Another	70	64

Source: Survey data.
s/means that difference is significant by chi-square at .05 interval of confidence.

Even high moving expenses do not substantially discourage the professorial tendency to view markets nationally. Of those who move over 1000 miles, 69% pay the major portion of their moving expenses without subsidization by the new employers. As the distance of the move decreases, still higher percentages of the professors finance their changes of residence.[5] Apparently the decision is to move or not to move. The actual distance and who pays for the move are less relevant.

REGIONAL PREFERENCES

Any regionalism existing can be explained by three factors: 1) inter-industry mix, defined as variations among regions in level, size, quality and control of IHE's; 2) intra-industry

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occur within the North Atlantic region. This suggests that supply and demand are quite aware of the market within metropolitan confines.

[5] Eighty-three percent of those professors moving less than 50 miles pay their own moving expenses.

supply differentials (e.g., age, sex, race, rank and degree); and 3) personal preferences, primarily of supply.

The inter-industry mix and intra-industry diversities explain why certain market sectors have limited regional participation. These two factors do not necessitate any specific regional preferences, only that some types of individuals (or IHE's) are concentrated in one region. The personal preferences, however, explain why certain regions are more popular than others. These preferences, often in conflict with economic motives, explain irrational behavior unaccounted for by ignorance. Diseases such as Southeasternitis or Great Lakesaphobia are perhaps the primary determinants of any regionalism which does exist.

The influence of background is obvious in movement. If the regions where the professors received their high school diplomas are indications of where they grew up, 57% of the movers accept jobs in their "home region." Fifty-six percent choose the region of their baccalaureate school, and 56% also return to the region of their graduate school. Since the aggregate data show that only 47% of supply cross regional boundaries in accepting their most recent positions (and we can assume that some of these do not move to regions of their backgrounds) there must be a constant tendency for supply to return to regions known best. All regions show this drawing power of greater than 50% for all categories. The power is strongest in the Southeast where, for all categories, over 63% return.

Perhaps the most significant indication of the preferral regions and the background which is the most dominant determinant of job choice is the relationship between the background influences and the supply's choices of the region of "El Dorado," the schools where they would most like to teach. Although an "El Dorado" is chosen for reasons other than location, location is certainly one factor that determines the desirability of the ideal job. Table 2 again indicates majority preferences for familiar regions, except among Midwesterners. Part of the explanation for the very high percentages, 64% and 67%, for the North Atlantic and Far West is that Harvard and Berkeley, the two most frequently mentioned El Dorados are in these regions. But more than this is involved. Both Far Westerners and New Englandersevidence a definite "provincialism" and "regional loyalty" which far surpasses that of the Midwesterners. The lower percentagefor the Southeast implies that many Southeasterners return to their home region not because they want to, but because it offers, comparatively, the best available job options.

Table 2. Region of El Dorado Compared to Region of Selected Background Influences

REGION OF EL DORADO JOB AND BACKGROUND INFLUENCE	PERCENTAGE OF EL DORADOS IN SAME REGION AS:			
	HIGH SCHOOL	BACCALAUREATE SCHOOL	GRADUATE SCHOOL	AVERAGE FOR ALL SCHOOLS**
North Atlantic	63%*	66%	64%	64%
Great Lakes and Plains	42	45	41	43
Southeast	51	56	54	54
Far West and Southwest	66	68	68	67
Weighted Average***	55%	58%	56%	56%

Source: Survey data.

*/ 63% equals "persons who attended high school in the North Atlantic who want to return" divided by "persons who attended high school in the North Atlantic." In other words, 63% of those who went to high school in the North Atlantic want to return. Similarly, 66% of those who attended undergraduate school in the North Atlantic want to return, and 64% of those who attended graduate school in the North Atlantic want to return to that region.

**/ Column 4 is an unweighted average of columns 1 through 3.

***/ Weights are the number of current jobs in each region. Since there were more vacancies in the Middle West than the Southeast, 42% was weighted more heavily than 51%.

What is important to note for both the recent movements and the ideal locations are the policy implications. If regions can be viewed as trading countries, it will be to their advantage to educate their own faculty, for there is a definite tendency for faculty to desire to remain in that region, with the exception of the Midwest. The economic advantage to schools in initiating such action and in giving hiring preferences to men educated in the same region will be reduced turnover rates.

THE REGIONS THEMSELVES

The preferences are not totally non-economic. The regions differ in their economic offerings as well as in their non-pecuniary smorgasbords.

Consider, for example, variations in average annual salary. Two roughly comparable groups were selected for detailed study. The first group, persons with new Ph.D.'s emerging from graduate school into the market, earn a mean salary of over $8,200 in the Midwest and as low as $7,700 in the North Atlantic, as shown by Table 3. Interestingly, the two regions with the strongest regional loyalties, the North Atlantic and the Far West, offer the lowest salaries, taking advantage of regional preferences on the part of supply. The Southeast, which is often regarded as a low salary region, if forced to pay good salaries in order to attract the needed manpower and to overcome some of its disadvantages in other job aspects.

Table 3. Mean Annual Salary for Selected Groups, by Region*

REGION OF CURRENT JOB	BEGINNING PH.D.'S	VETERAN PH.D.'S**
North Atlantic	$7,700	$9,900
Great Lakes and Plains	8,200	9,600
Southeast	8,100	9,200
Far West and Southwest	7,900	9,400

Source: Survey data.
*/The figures are rounded to the nearest 100.
**/Includes only persons holding Ph.D.'s and who switched from one faculty to another in 1964-65.

As time passes, however, the salary advantages of persons locating in the Midwest and Southeast diminish and disappear. As faculties increase their non-economic ties and become immobilized, the wealth of schools in the regions becomes more apparent. For example, newly hired, but experienced Ph.D.'s earn, on the average, from $200 to $700 less in the Southeast than in any other region. The Midwest is no longer the highest paying region. In the more experienced group, the North Atlantic, is the leader.

The strategies followed by a majority of the institutions in the two regions differ considerably. Where the North Atlantic hires low and gives promise of high future earnings, the Southeast and Mid West offer high salaries to start with, but less prospect for sizeable increases in the future. The income optimizing student, if he does not locate in the Midwest, should first locate in the South and then move to the North Atlantic region. Of course this assumes that the student who first locates in the South will be given the opportunity to move later to an "average" job in the North Atlantic region. If such mobility is not possible (this will be examined subsequently), new college teachers will tend to choose the Midwest and Southeast if they are short-run maximizers and avoid the Southeast if they are long-run maximizers.

What is true of salary is also true of rank, as shown by Table 4. To attract beginning Ph.D.'s, the least preferred regions of the Midwest and Southeast hold out the highest ranks. The biggest contrast in hiring traditions is between the North Atlantic and Southeast. IHE's in the North Atlantic region are able to offer the lowest rank of instructor to one-third of the emerging students with Ph.D.'s that they hire. Beginning professors are able to demand a senior rank in only 3% of the hirings. In the Southeast, only 11% of the newly appointed Ph.D. holders will settle for less than an assistant professorship and 17% demand a senior rank. The Midwest and Far West fall somewhere

Table 4. Academic Rank of Appointments of Student Ph.D.'s, by Region

REGION OF CURRENT JOB	PERCENTAGE APPOINTED AS INSTRUCTORS	PERCENTAGE APPOINTED AS ASSOCIATE OR FULL PROFESSORS
North Atlantic	33%	3%
Great Lakes and Plains	13	9
Southeast	11	17
Far West and Southwest	12	8

Source: Survey data.

within these two extremes of security and competition. By accepting an appointment in the Southeast, a new Ph.D. increases his prospects of receiving tenure at a young age. Faced with a supply problem, institutions in the Southeast evidence a willingness to offer both rank and salary to buy their way into the Ph.D. market.

The amazing element in the preceding data is that the North Atlantic is able to hire over one-fourth of the new Ph.D.'s, even though it hires a large percentage as instructors and offers the lowest average annual salary. In addition to the greater probability that these hirees will reap the higher "experienced salaries" in the N. A., one other possible explanation is that there is more prestige to be offered. In the North Atlantic, over 20% of the new hirings are by schools in the qualitative top 20%, whereas less than 15% of the vacancies in each of the other regions are located at such schools. At the same time, the North Atlantic has the smallest percentage of vacancies at the poorest IHE's. Stature is certainly an attraction, and one which is not entirely non-economic. The high quality institution usually means better facilities, brighter students and more illustrious and more competent colleagues, all of which will enhance productivity. A similar attraction is the fact that the North Atlantic has the largest portion of graduate students in the country (36%) and, consequently, the greatest number of the coveted positions which involve graduate level teaching.

When competing for similarly qualified faculty at the beginning levels, the regional differentials appear to conform closely to the theory of compensating differentials. The regions that have the least to offer in terms of prestige and graduate level teaching are the very regions that offer the highest salaries and ranks. The preferred regions offer as little as the traffic will bear.[6]

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[6] Inducements can overcome preferences. For the right job, professors can be lured between regions. The campaign of the disadvantaged regions to offer higher salaries and higher ranks does bear fruit, though it is sometimes frustrated by the higher prestige offered by an institution in one of the preferred regions.

To attract individuals from outside their home regions, most institutions do find it necessary to offer special inducements. Of the persons drawn from outside their regions, 30% had to be offered promotions in rank, compared to only 28% for those drawn from within their regions. When an employer goes out of his region for supply, he must draw from a slightly lower quality pool. Thirty-eight percent of the professors who move between regions are drawn from schools of lesser quality (than the job that they are drawn to), whereas only 28% of the supply drawn from within the region are located at lesser quality schools. Also, higher salaries have to be offered to 31% of the persons attracted from other regions, compared to only 25% for the intra-region movers.

INTER-INDUSTRY VARIATIONS

The aggregate data suggest that the academic labor market is remarkably national in scope. The supply is mobile, constrained by economic rationality, but regionally oriented on the margin. We would expect that within the aggregate of supply there are groups whose marginal influences are greater than others and are therefore more regionalistic. These marginal differences arise from the differences among the schools themselves and the supply which typically affiliates itself with them (i.e., inter-industry variations) and from the various personal characteristics of supply itself (i.e., intra-industry variations). All of supply will consider the basic relationship of marginal gains and marginal costs and will expand its market until the two are equal. The marginal considerations are not very precise, but they will vary in cost, gains and expectations for various groups.

The crucial factor determining the geographic breadth of sub-markets is size--specifically, the number of employment alternatives acceptable to an individual job seeker within the confines of one geographic region. Certain types of academic appointments are quite numerous: for example, instructorships in American history and assistant professorships in mathematics. But specialized vacancies such as full professorships in microbiology at top-rated universities and department chairmanships in hospital administration are few in number. The individual seeking an instructorship will find a plentitude of vacancies within his home region, probably some quite good ones. Because his home region offers a large sample of available vacancies, even though the sample is not random, the instructor will find little advantage in extending his horizons to different geographic areas. In contrast, the individual seeking a chairmanship in a highly specialized field may find that there are no vacancies within his region, or very few. To obtain an adequate sample (if this is ever achievable), he must extend his search to new regions. Because his home region sample is so small, the probability of finding a better job in another region is quite high.

To generalize from this example, individuals who may expect to find a small number of acceptable vacancies within their own regions will broaden their market horizons to include other regions, and individuals who seek the types of positions that are relatively numerous in all regions will tend to confine the search to their home regions. The smaller the absolute numbers involved in a sub-market, the more likely it is to be nationally oriented.

The number of universities within a single region is less than the number of colleges, leading us to expect that persons seeking university-level appointments would move interregionally more often. The data in Table 5 are in accord with expectations. Fifty-six percent of all university professors move between regions when switching jobs. Only 43% of the college professors switch regions.

Table 5. Size of Market and Interregional Mobility, for Selected Groups of Veteran Faculty

CHARACTERISTIC OF CURRENT JOB	PERCENTAGE WHO SWITCH REGIONS SMALL MARKET	LARGE MARKET
Level:[s]		
University	56%	
College		43%
Size:[s]		
Large (more than 5,000 students)	56	
Small (less than 1,000 students)		42
Quality:[s]		
Top 20%	57	
Bottom 20%		41
Rank:		
Junior Facutly		52
Senior Faculty	49	
Disciplines*[s]		
Large Disciplines**		53
Small Disciplines**	60	

Source: Survey data, COLFACS Study, and Prestige Index.

*/The figures for discipline include all newly appointed college teachers. All other data refer to only those who move from one faculty to another. Thus, students last year are included in the disciplinary data but not in the other data.

**/The twelve disciplines with the largest absolute number of full-time professors, according to COLFACS data, are mathematics, English, physical education, music, history, chemistry, physics, art, economics, political science, elementary education, and sociology. The twelve smallest disciplines included in our study are bacteriology, journalism, chemical engineering, social work, anthropology, clinical psychology, other engineering, microbiology, classical languages and literature, general botany, physiology, and experimental psychology.

s/means that difference is significant by chi-square at the .05 interval of confidence.

For the same reasons, professors seeking positions at large schools and at the highest quality schools move between regions more often than their opposites.

Because of the hire-at-the-bottom-and-promote tradition, more vacancies occur at the lower ranks. An individual seeking a new job will find within his region more positions at the junior ranks than at the associate and full professor level. Correspondingly, we would expect more interregional mobility at the higher ranks. In this case, however, the data neither deny nor confirm the hypothesis. Evidently the fact that the individuals eligible for junior ranks are younger and have not yet developed strong regional attachments offsets the "size of market" effect.

As a final test of the "size of market" hypothesis, the disciplines were divided into two categories according to the number of persons trained in the specialty. The dozen disciplines with the greatest absolute number of professors were grouped in one category, the "large" disciplines, and the dozen disciplines with the smallest number of professors were grouped in the "small" category. As expected, individuals in the large disciplines are more regionally oriented than individuals in the small ones. Of those in small sub-specialties, 60% move interregionally, compared to 53% for the "large" disciplines. In mathematics, an example of a large discipline, only 44% move interregionally; whereas in bacteriology 58% switch regions.

INTRA-INDUSTRIAL DIVERSITIES OF SUPPLY

The preceding section dealt with variations among the industrial entities of the academic labor market, the schools themselves. For each industrial grouping, there are segments of supply which align themselves more with one industry than with others. These differences in orientation are due to the personal characteristics of supply. Certain sectors of supply are thus more interregionally oriented than others. For example, the publishing professors, a group concentrated at the larger and more prestigious universities, are more likely to switch regions when changing jobs than their less prolific colleagues. And the holders of doctorates, a group less likely to be located in the smaller colleges of lower prestige, are more nationally oriented than the persons without doctorates. These data are presented in Table 6.

Other intra-industry differentials result from benefit-differentiating demographic variations. Again, the decision to extend one's pursuit of a new job beyond a single region varies according to the expected values and costs. If we can assume that the farther the distance moved, the more limited will be the knowledge of the new position and its environment, we can expect certain groups of professors to be more willing to move long distances. This is because if knowledge is limited, the expected gains will not be as certain, whereas the expected costs in terms of current psychic income will be definite.

Table 6. Selected Personal Characteristics and Interregional Mobility*

PERSONAL CHARACTERISTICS	PERCENTAGE WHO SWITCH REGIONS
Publications:s	
Ten articles or one book	59%
Fewer than 10 articles	47
Highest Degree Earned:s	
Doctorate	51
Less than Doctorate	41
Age:s	
Under 35 years old	54
35 old older	45
Sex:s	
Male	51
Female	42

Source: Survey data.

*/The percentages cited in this table are persons who move from one faculty to another and do not include persons who were students last year.

s/means that difference is significant by chi-square at .05 interval of confidence.

Some groups will thus be willing to experiment, to sacrifice current psychic income and to incur inconveniences.

By this rationale, the younger professors, who may reap the benefits of the gain in annual net advantage for a greater number of years, should be more interregionally mobile than older professors are: 54% of the professors under 35 switch regions, compared to only 45% of those 35 and older. Similarly, men, who typically spend a greater number of years in the labor-force, should be and are more prone to switch regions than women.

REGIONALISM OF DEMAND

The survey was designed to analyze the supply side of the labor market, where emphasis in exposition has been placed.

We cannot statistically demonstrate regionalism arising on the part of demand, but we can expect that the same theoretical reasoning should apply.

All schools will not compete in the same market for the same people. They will be guided by the principle of equating the marginal revenue product per last dollar for all factors. Nevertheless, each school will have its expectations of productivity modified, and purchasing power will vary among schools.

Wealthier schools will be capable of paying higher salaries, financing larger markets, bearing the costs of campus interviewing and transportation, and providing better teaching and research facilities. All of these factors will increase their probabilities of finding and hiring more productive individuals. Thus, if two schools have evaluated the marginal gain of recruiting interregionally, the wealthier school, by virtue of its "fringe benefits," will have a better chance of success. Since interregional participation is dependent not only on the value of the gain but also on the probability of achieving success, the wealthier schools will participate at lower marginal values.

Larger universities are more likely to seek national markets. Although they will have close association with other schools in the region, their demands are such as to necessitate interregional marketing. They will, first of all, have a larger number of demands than small schools. Secondly, they will be demanding specialists rather than generalists. Their demands will thus be in excess of the qualified supply within the region. At the same time, the larger school will already have a faculty drawn from all parts of the country, which will increase contacts outside the region.

Schools of higher quality will also have a wider market. By virtue of their reputation, they will increase their probability of hiring anyone they try to recruit. At the same time, their demands will not only be for specialists, but for certain specialists. The qualified supply is thus so small relative to the demand within each region that interregional shopping is necessary. This is all suggested by the data on supply.

The only way we could directly approximate any of the demand oriented regionalism would be to make assumptions regarding the dispersion of these demands among the various types of supply by the various types of demanders and additionally to conjecture some ratio of jobs accepted to jobs offered. Since the assumptions would clearly determine the answers, the question of demand oriented regionalism is best left unanswered.

SUMMARY

Academic labor markets are national. Movement across regional boundaries is typical. Few job changes are made without geographic relocations. There are variations in the geographic breadth of sub-markets according to factors such as the absolute number of vacancies of the type sought, demographic characteristics of supply (intra-industry), characteristics of the hiring institutions (inter-industry) and preferences of supply. And, there are substantial differences in the types of opportunities offered by various regions. But the continuance of these differential opportunities appears to be more the result of differentials in the necessity and ability of the regions to make the terms it offers competitive, not the unwillingness of supply to cross regional boundaries.

CHARMED CIRCLES
AND
SCHOLARS' SIBERIA.........CHAPTER ''

The academic profession, held in high esteem by many, is consistently surpassed in status by only the medical profession. The intangible rewards of renown from publications and of service from the "thank you's" of students continue to lure men into academia, even at the sacrifice of higher incomes. Of the professional fields, only the ministry necessitates a larger intangible reward as compensating for deficient income.

Behind the walls of academia, an individual's reputation, his prestige and stature are, to a large extent, enabled and determined by the stature and renown of his employing institution. Because of this link, the stature of competing colleges and universities is believed to be a significant determinant of job choice. Willingly sacrificing the immediate possibility of both rank and salary, professors strive to gain appointments at highly prestigious schools. The sacrifice of current income is made not only to gain immediate prestige, but also to realize a greater value of discounted future earnings, for the more prestigious schools, by providing their faculty with the best resources and the time to use them,offer the best opportunities for future income. "All professors yearn to be at Harvard or Stanford."

But the charmed circle of highly prestigious schools is quite exclusive. Only a very talented few who are not already within the circle are allowed entry, and many who once attain entry are soon to be cast off to the schools of lesser prestige. In academic labor markets, the majority of movement is believed to be downward, from high stature schools to schools of lesser stature. Any upward movement is rare. Upward movement out of the poorest quality schools, Scholars' Siberia, is exceedingly unique.[1]

In each of these beliefs there are both truthful and mythical elements, as we shall see in this chapter.

Throughout the chapter, as in others, institutions are rated according to our "prestige index." The index is a composite rating based upon eight factors believed to be concomitants of "prestige in the eyes of scholars": percentage of faculty with Ph.D.'s, mean faculty salary, percentage of undergraduate students continuing to graduate school, percentage of all students who are studying at the graduate level, ratio of faculty to students, total size of the faculty, number of volumes in the library per full-time student, and total income per student. The methodology used to construct the index and the names of all four-year colleges in each of the derived groups are identified in the appendix.

THE EDIBILITY OF PRESTIGE

Appointments at the highly prestigious schools should be cherished, and, according to a theory of compensating differentials, the faculty at these schools should be willing to trade off the possibility of higher rank and higher salary to gain such an appointment. Similarly, the better schools should capitalize upon their prestige advantage through the economy measure of lower salaries, lower ranks, and generally lesser compensation, since, other things equal, an individual's expected future income will be greater at the higher prestige schools.

A professor's productivity depends upon the fixed resources he has to work with, the quality of the variable resources working with him, the opportunities he has to make use of his full potential, and the potential of his school. In each instance, the more prestigious schools are more likely to establish an environment most conducive to high productivity.

The fixed resources are greater at the top. The more prestigious schools are, typically, the larger universities able to afford better libraries, larger laboratories, more diversified research programs, and greater specialization. It is these same universities that are most free from the shackles of political and denominational control from the outside, that can offer the greatest assurance of academic freedom, and that attract better than average students.[2]

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[1] See Theodore Caplow and Reece J. McGee, The Academic Marketplace (New York: Basic Books, Inc., 1958), pp. 147-154.

[2] Nearly 60% of the schools in the top 20% enroll more than 5,000 students. None of these schools are denominationally

Moreover, the teaching schedules in the top prestige schools are such that the faculty will have the opportunity to concentrate their teaching effort, to minimize their hours in the classroom, and to enhance their own reputations as well as that of the school. Access is convenient to publication outlets: journals, monograph series, university presses. Schedules are conducive to research. Whereas the average professional at a bottom 20% school spends more than 12 hours in the classroom the mean teaching load at the top 20% of schools is less than 8 hours. Additionally, the specialization allowed at the larger, better schools allows certain economies of scale for the individual teacher-researcher. The top group has the largest percentage teaching in only one field (87% compared to 75% in the bottom group) and the largest percentage teaching and reserach-ing in the same field (88% compared to 78%).

Added to all these advantages is the stimulation of one's colleagues who are more likely to be Ph.D.-qualified and to hold degrees from the best graduate schools. As an indication of the relative emphasis placed upon the diverse responsibilities of a professor's job, our respondents were asked whether they spent more time researching or teaching, or equal times at both. Of those who are primarily researchers, 34% are located at the top schools, compared to only 8% at the bottom.[3]

Evidence of the better facilities, greater abilities, and stronger inclinations toward research at the best schools is offered by the fact that only 8% of those newly hired professors who had been at the worst schools (bottom 40%) were big publishers (10 articles or a book), compared to 26% at the best schools (top 10%).

But the potential monopsonists, the highly prestigious schools, do not take full advantage of the bargaining power afforded by their greater non-monetary attractions, at least not by the conventional method of paying lower compensations. To the experienced faculty, the "established firms" offer both more prestige and higher compensations. If faculty were to sacrifice prestige for income, they would, as a rule, be teaching at the same prestigious institutions. See Table 1.

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controlled, although a few still maintain loose association with their founders. Of all newly hired college teachers, undoubtedly a group of above average students when enrolled, 41% received their last degree from one of the top 20% institutions.

[3] Of those spending more time teaching, only 9% locate at the top schools and 33% at the bottom.

Table 1. Average Starting Salaries for Ph.D.'s* by Institutional Quality

QUALITY OF THE INSTITUTIONS	MOVED FROM ONE FACULTY TO ANOTHER	MOVED FROM STUDENT TO FACULTY
Top 10%	$10,800	$8,100
Top 20%**	10,500	7,900
20-40%	9,900	8,100
40-60%	9,300	8,200
60-80%	9,200	8,000
80-100%	8,800	7,600

Source: Survey Data and Prestige Index (explained in the appendix).

*/Only Ph.D.'s are used so as to promote homogeneity of supply. If non-Ph.D.'s are used the salary structure declines from top to bottom, with the top quality schools using even less of their monopsonistic power.

**/The top 20% includes the top 10%.

To the emerging Ph.D. top schools offer salaries that are virtually identical to the IHE's of lesser prestige, except for the bottom 20% of schools where the salaries are lower instead of higher. The new Ph.D. does not need to trade off salary to locate at the more prestigious schools.[4]

What is true for new Ph.D.'s is even more true for experienced faculty holding Ph.D.'s. Not only is it unnecessary for persons desiring to locate at top schools to sacrifice salary, the lower the school is in the prestige hierarchy, the lower salary it is likely to pay. Whereas the top 10% IHE's are paying an average of $10,800, the bottom 20% are paying only $8,800.

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[4] More significant than the necessity to give up salary for prestige is the salary sacrifice required of those who wish to locate in the North Atlantic. The salaries for any quality groupings in the North Atlantic are below the salaries for the same quality groups in all other regions.

It may be argued, however, that the similarity of salaries is more apparent than real: the top schools are getting better men (the stars) for this same wage and, if the lower eschelon schools could have these stars for the same salaries they are paying their current faculty, they would prefer them. Extending the argument, it may be that the lower eschelon schools would be willing to pay to these stars more than they are paying the men they are currently hiring if only the stars would come. Reacting to the argument, though there is some truth in it, it seems unlikely that the stars would receive much more from the poorer schools, for, in most cases, these schools are already extended to the limits of their ability to pay.

The inability of the poorer schools to attract experienced, highly qualified faculty, and to retain capable researchers, is not only a product of lower prestige but also of lower salary. The low quality schools do compete for emerging Ph.D.'s, but are not capable of competing for the experienced faculty.

The monopsonistic power is being used--not to hire the same quality supply at a lower rate, but to make more discriminating judgments about the quality of supply.[5] The top schools are able, for instance, to hire persons with superior graduate training, with their terminal degree, and with substantial records of publication--as shown in Table 2.

Table 2. Characteristics of New Hires, by Institutional Quality

QUALITY OF THE CURRENT INSTITUTION	PERCENTAGE WITH DOCTORATE	PERCENTAGE BIG PUBLISHERS	PERCENTAGE WITH LAST DEGREE FROM TOP 20%
Top 10%	74%	67%	80%
10-20%	67	52	64
20-40%	54	47	49
40-60%	52	24	34
60-80%	39	31	43
80-100%	32	28	28

Source: Survey Data, Prestige Index, and Productivity Index (explained in the appendix).

From the individual's perspective there seems to be little reason not to go to the higher prestige schools if the opportunity affords itself.[6] Prestige need be only slightly edible, even in the short run.[7]

THE PORTS OF ENTRY

With all of the advantages offered by the top schools, there is no doubt that they can be selective in their hirings. At the same time the competition for the openings will be greater. Despite the individuality of each professor, there is inherent homogeneity. A large segment of supply is very likely to be of apparently equal ability, a segment larger than can be hired by the top schools. Selection will, therefore, often depend upon some other criteria.

The receipt of the doctorate is apparently one such criterion, as was seen in Table 2. But even the doctorate is not enough to place a man in competition for a top position.. The stature of the doctorate granting institution is tremendously important, especially for emerging students. The top schools are reluctant to recruit outside the charmed circle. Of last

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5. For a theoretical discussion of such use of monopsonistic power, see Martin Bronfenbrenner's "Potential Monopsony in Labor Markets," Industrial and Labor Relations Review, July 1956, pp. 577-588.

[6] The top schools offer better fringe benefits and greater opportunities for "outside" incomes. Whereas the average professor moving to an IHE in the top 20% group expects to earn outside income of almost $1200, the comparable figure for professors at the bottom 20% schools is only $250.

[7] Academic rank has such different meanings at various schools that it is not included in the above discussion. If the improbable assumption that rank means the same thing at different schools is made, then 9% of those persons moving between two faculty appointments sacrifice rank in order to gain prestige. Or, in a slightly different vein, 15% lowered quality to increase rank.

year's students hired by schools in the top 10% group, 69% are drawn from the graduate departments from other top-rated schools. A student from a top-rated school has a 16% chance of accepting employment in another top-rated school, whereas students from schools rated in the bottom 90% only have a 2% chance of obtaining appointment in a top-rated school.[8]

Bernard Berelson, in his extensive survey of graduate education, reaches similar findings when he concludes" "Where one ends up, by these institutional classifications, depends a great deal on where one starts with his doctorate." Studying all faculty by analyzing degrees listed in catalogues, Berelson notes that a very high 85% of the present faculty in the top 12 universities holds their highest degree from one of these same schools.[9]

If career options are determined by the prestige level of one's graduate school, it is important to know how to become a student at a high quality graduate school. Some indication is offered by our survey. Of those respondents who had attended a top (20%) graduate school, 36% received baccalaureates from a top rated undergraduate school whereas only 12% had entered from a bottom-rated (20%) undergraduate school. To cite Berelson's findings again, 32% of those receiving doctorates from his select group of the top 12 universities had completed baccalaureates at these same schools.[10] Although Trytten's ambitious study of the baccalaureate origins of Ph.D.'s shows that there are many exceptions, the general rule is that the students who attend the best undergraduate schools are most likely to attend the best graduate schools and, ultimately, to be placed in the best faculty positions.11

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[8] There are other advantages of attending top-rated graduate schools. More offers are received: 25% of the students from top schools receive two or more offers, compared to only 13% from the bottom group of schools (bottom 20%). After adjustments are made for differences in the prestige of the appointing institution and the degree attainment of the appointed individual, students from the better schools are hired in at higher academic ranks and higher salaries. Students from the better schools are also able to bargain for lower teaching loads: average teaching loads of 8 hours for the students from the top 20% of schools compared to 13 hours for those from the bottom 20%. Almost 90% of the students from the top 10% of schools move to positions requiring 9 or fewer hours of teaching, compared to 20% of the students from bottom eschelon IHE's.

[9] Bernard Berelson, Graduate Education in the United States (New York: McGraw-Hill Book Co., Inc., 1960), pp. 112-115.

[10] Ibid., p. 112.

As for last year's faculty, room at the top is found more easily if they hold a Ph.D., and to an extent if they are currently at a top quality school, which will be discussed shortly. The easiest way to the top, however, is by publishing. Sixty-seven percent of the faculty hired by the top 20% have published. This datum includes emerging students. If we consider only those who have been teaching for a time, notably those who accepted associate and full professorships, 97% have published.

EXTENT OF BALKANIZATION

Variations in prestige and stature do create balkanizations in the academic labor market, so that the manpower qualified to teach at the highly prestigious schools rarely competes with the supply to the poorest institutions. Yet, market boundaries are defined only in a vague way. Movement among quality levels is common, even at the extremes where balkanization is the greatest. The academic labor market is not populated

Table 3. Intra-Group Hirings, by Quality of Institution

QUALITY OF THE PREVIOUS INSTITUTION	PERCENTAGE MOVING BETWEEN FACULTIES OF SCHOOLS IN THE SAME QUALITY GROUP*
Top 20%**	36%
20%-40%	18
40%-60%	26
60%-80%	31
80%-100%	44
WEIGHTED AVERAGE	28%

Source: Survey data and Prestige Index (explained in the appendix).

*/For example, 36% of the last year's college teachers who moved from the top 20% of schools came to a top 20% school.

**/The percentage for the top 10% only is 27.

by self-contained clusters of institutions of similar stature which trade faculty and students only within the group and never allow outsiders participation. Markets are somewhat isolated, but the divisions by stature are not nearly as great as the balkanizations arising among schools of various sizes (42%), regions (46%) and types (62%). Relevant data are presented in Table 3.

If the academic labor market is divided into fifths according to prestige so that we think of the one-fifth of all faculty appointments that are most prestigious, the one-fifth that are second most prestigious, and so forth--a quite broad definition of "tight cluster"--we find that no one of these clusters draws even a majority of its veteran faculty from within itself. Of the new hirees leaving the college faculties of the institutions representing the one-fifth most prestigious positions, only 36% go to the same group of institutions. Similarly, 44% of the experienced faculty leaving the lowest 20% group are reappointed within that group. Different quality faculty are probably most insubstitutable at the poles. The top group has very specific demands and the wherewithal to realize them. Excess supply at higher quality institutions, many of them left over graduate students, forces a certain amount of downward mobility and leaves little room for the students and faculty from the bottom groups to move up. The bottom group institutions are those with relatively unattractive jobs and a paucity of supply willing to accept the jobs. Their ability to attract faculty from more prestigious schools is extremely limited.

But these represent extremes, and not high extremes at that. For the middle groups, where neither set of special conditions are as operative, less than one-third of the newly hired veteran faculty are drawn from institutions within the same group.[12] The faculty and students in these middle groups are largely substitutable qualitatively. With some exceptions, they are neither the leading specialists in their fields nor are they of such low stature that they deserve exile to "Siberia."

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11. M. H. Trytten, Doctorate Production in United States Universities 1936-56: With Baccalaureate Origins of Doctorates in the Sciences, Arts, and Humanities ("Publication 582"; Washington, D. C.: National Academy of Sciences, National Research Council, 1958).

12. What is true of veteran faculty is also true of the largest group of movers, last year's students. Because the better schools educate disproportionately large numbers of graduate students, at first it appears that within-group hiring is very high at the good schools and very low at the poor ones. After accounting for the differences in graduate student populations, however, again it is found that the extent of intra-group movement is not large for any group and that it is smallest for the middle groups.

More in the middle groups than at the extremes, but generally throughout the academic labor market, quality balkanization is imperfect. Between-group movement is frequent.

VERTICAL MOBILITY

The existence of between-group mobility does not necessarily imply, however, that movement is free. Between-group movement may be uni-directional in the sense that it is always downward, always from a high prestige IHE to a low prestige one. Once outside the charmed circle return may not be possible. The road to "Siberia" may be one way.

When student movement is included, the physical necessity of downward mobility is obvious. The top 20% group of schools supply 5000 emerging students to the market but employ only 1300 of them.[13] In general, the better schools supply disproportionate numbers of the graduate students to the market.

Table 4. Direction of Inter-Quality Movements of Last Year's Students*

QUALITY OF GRADUATE INSTITUTION*	TOTAL	QUALITY OF PRESENT INSTITUTION HIGHER	SAME	LOWER
Top 10%	100%	--	16%	84%
10%-20%	100	4%	8	88
20%-40%	100	7	23	70
40%-60%	100	18	28	54
60%-100%	100	28	72	--
WEIGHTED AVERAGE	100%	10%	26%	64%

Source: Survey data and the Quality Index (explained in the appendix).

*/Row totals equal 100.

Therefore, it is not surprising to find, as shown in Table 4, that only 10% of the emerging students move up in quality as they accept their first jobs. For 64% of all students, the move between graduate school and first job is downward. In fact, for all categories of schools except the lowest where downward movement is impossible, a majority of the students accept first jobs in IHE's of lesser prestige than the one they are leaving. The 20%-40% eschelon supplies faculty for the 40%-60% and 60%-100% eschelons. And the 40%-60% eschelon educates the faculty for the 60%-100% group of IHE's.

The physical necessity of descent does not, however, preclude the possibility of ascent. There is no absolute a priori reason, except lack of ability, which militates against upward mobility. It should certainly be possible for those in the bottom IHE's, if qualified, to move up in such large numbers that more of those currently at the top will be forced down.

Such opportunities are immediately evidenced by the fact that top 10% IHE's hire both emerging students and last year's faculty from all quality levels.

Table 5, which includes only persons who have moved from one faculty to another, evidences the fact that upward mobility is certainly not such a rarity as Caplow and McGee believe.

Table 5. Direction of Inter-Quality Movements of Last Year's Faculty*

QUALITY OF PREVIOUS INSTITUTION*		QUALITY OF PRESENT INSTITUTION		
	TOTAL	HIGHER	SAME	LOWER
Top 10%	100%	--	27%	73%
10%-20%	100	14%	11	75
20%-40%	100	24	18	58
40%-60%	100	31	26	43
60%-80%	100	40	31	29
80%-100%	100	56	44	--
WEIGHTED AVERAGE	100%	32%	28%	40%

Source: Same as Table 4.
*/Row totals equal 100.

At the top quality institutions of the type studied by Caplow and McGee, most of the mobility is downward, for excepting parallel movement, there is no other direction to move. From this prestigious group 73% of all movers move down. Manpower flows are uni-directional. But the exodus from the top schools is not the whole picture.

Though 40% of all persons switching faculties move down, another 32% move up. The risers typically start at the bottom where the possibility of upward movement is maximized, as is illustrated by the fact that 56% of those leaving the bottom group of schools move upward. As would be the case in an undivided market, whether a mover switches up or down is primarily dependent upon his original position in the quality hierarchy. If his original placement is such that there are many more institutions below than above, his move is likely to be downward. But if he is originally located in a poorer institution, his maximum likelihood movement is upward.[14]

Being in the right field also enhances an individual's probability of upward movement. The opportunities in different disciplines are increasing at different rates. In the more rapidly expanding disciplines such as mathematics, physics, and mechanical engineering, many new positions are created throughout the entire quality spectrum of institutions. When a new position is established at a top IHE, the school raids poorer ones to obtain the needed faculty. The raid, in turn, gives rise to a vacancy in a second-eschelon school. The result may be a raid at a third eschelon school, and so forth. A position newly created at one of the best institutions gives rise to the possibility of a series of upward movements.[15] Upward mobility

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13. Similar to the figures throughout this study, these do not include graduate students employed as full-time faculty members by the same institutions where they are working for their degree.

[14] The possibility of upward movement, and the avoidance of downward movement, is increased by publication. Though it is certainly easier to start at the top and resist the downward push, the professor who publishes his way out of Siberia into the most prestigious schools is not entirely legendary. There is a definite positive relationship between the amount of publocation and the amount of upward mobility, as shown by Table 6. Among those leaving each quality eschelon, big producers (10 articles or 1 book), when compared with lesser publishers, are more likely to move up and less likely to move down.

[15] For a similar description of how the better jobs are filled see Melvin W. Reder, "Theory of Occupational Wage Differentials," American Economic Review, December, 1955, pp. 833-852.

Table 6. Direction of Inter-Quality Mobility and Extent of Publication

QUALITY OF PREVIOUS INSTITUTION	PROBABILITY OF MOVING TO AN INSTITUTION WITH A PRESTIGE RATING THAT IS -- **			
	Total	Better	Worse	Same
0%-10%	100%(100%)	*	67%(79%)	33%(21%)
10%-20%	100 (100)	*	56 (79)	44 (21)
20%-40%	100 (100)	33%(20)	30 (62)	37 (18)
40%-60%	100 (100)	46 (25)	40 (41)	14 (34)
60%-80%	100 (100)	42 (38)	12 (30)	46 (32)
80%-100%	100 (100)	72 (53)	*	28 (47)

Source: Survey data, Quality Index, and Productivity Index.
*/There is no possibility of moving up (down).
**/The figures cited refer only to "Big Producers," defined as persons who have published 10 or more journal articles or a book during the last five years. The figures in parentheses, "( )" refer to all persons who are not "Big Producers."

is, therefore, maximized in the most rapidly expanding fields, as shown by Table 7 which includes only individuals who had both the possibility of moving up or the possibility of moving down.

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16. That is, the professors leaving the top 20% and the bottom 20% institutions are not included. Also, the probability of moving up is higher for Ph.D.'s (1/3rd) than for non Ph.D.'s (1/5th).

Table 7. Direction of Inter-Quality Mobility by Disciplines Selected According to Rates of Expansion*

DISCIPLINE	PREVIOUS QUALITY AND PRESENT QUALITY COMPARED:s			
	TOTAL	PRESENT HIGHER	SAME	PRESENT LOWER
Rapidly Expanding Disciplines**	100.0 %	48.4%	22.4%	29.3%
Slowly Expanding Disciplines**	100.0	43.1	20.7	36.2

Source: Survey data.

*/The figures in the table represent all last year's college teachers except those located in the top 20% and bottom 20% of institutions. These individuals are excluded because they do not have the possibility of moving both up and down. For example, it is impossible for an individual who is already teaching at a top 20% school to move up because there is no higher category.

**/For 24 disciplines an expansion rate was computed as "the number of positions filled in 1964-65 for which there was no predecessor" divided by "the number of positions filled in 1964-65." The eight disciplines with the highest rates are included in the "rapidly expanding" group: mathematics, mechanical engineering, electrical engineering, physics, biochemistry, clinical psychology, chemistry, and educational services. The eight disciplines with the lowest rates, the slowly expanding group, are sociology, English and literature, physical education, history, general zoology, French, music, and general biology.

s/means that differences are significant by chi-square at .05 interval of confidence.

THE QUALITY NEUROSIS

Apparently there is no barrier to interquality movement except a lack of ability or desire.

If there is a neurotic group, it is at the bottom of the scale. Of those who accept a job in a top school, 8% reject higher salary offers from schools of lower quality. This probably reflects the fact that expected long-run productivity is greater at the top IHE's than are the short-run gains to be had at the lower quality schools. More irrational are the 5% of those who accept their current jobs in the 60-80% level school[17] and reject concrete offers of higher salaries at better schools. Not only is upward mobility possible for these people, destroying a commonly held myth, but the neurosis is reversed entirely. If there is any deficient upward movement, it stems from the irrationality of the lower groups, and not discrimination on the part of the upper groups. These high quality schools, have become "established firms" by operating according to some maximization principle, and will continue to hire the best qualified individuals wherever they may be located.

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[17] This group is used not to distort the results, but only because the data on the 80-100% group was not significant.

DISCRIMINATION IN THE MARKETPLACE ....CHAPTER 12

Already it has been shown how personal characteristics modify the extent of balkanizations. Indirectly, personal traits alter the nature of manpower flows. For instance, men are more willing to move across regional boundaries than are women.

The concern of this chapter is with the direct impact of demographic and personal characteristics on the nature of mobility: the effects of womanhood on women, of race upon race, and of religion upon members of certain religions.

THE EXTENT OF BALKANIZATION

Market divisions do exist by sex, by religion, and probably by race. There are submarkets in which women predominate, submarkets for Catholics and for Methodists, submarkets for non-whites and for whites. Women tend to be concentrated at women's colleges where they teach more than men and are paid less. Agnostics are concentrated at public and non-denominational schools; Catholics are at Catholic schools; and Protestants are at Protestant schools. Disproportionately large segments of the staff at Negro colleges are non-white.

The differing compositions of the teaching staffs at various types of schools is so pronounced that there is no doubt that submarkets do in fact exist. Whether the submarkets are created by the actions of supply, preferring one type of institution to another (e.g., women making themselves available to women's colleges at a lower price than to coed and all male institutions), or by the actions of the demanders, hiring only supply with certain personal characteristics (e.g., women's colleges extending offers only to women), is a question that needs to be pursued. But the question of "balkanization-no balkanization" is a moot one. Instead of taking the time to present directly the evidence for balkanization, I shall turn immediately to the question of why the balkanization exists. That is, what causes balkanization by personal characteristics? Why is there a special submarket for women? In the course of answering these questions data will be presented that will illustrate the balkanization.

THE ECONOMICS OF DISCRIMINATION

The word, "discrimination," in popular usage connotes a conscious policy, steming from malice or prejudice, to treat equals unequally, irrationally to impose disfavor upon a selected group, to exploit unfairly, to violate fundamental rights as a consequence of following a course of action contrary to the course deemed most rational by objective standards. This is more precisely labelled "exploitative discrimination."

There is another specie of discrimination which is sometimes confused with the first. It is often not immoral, but rather amoral. It may be rational by some objective criterion. It is often not conscious. Let us call this second specie "economic discrimination" to connote that it is economically rational. This type of discrimination may involve treating two persons who are equal "in the eyes of God" as unequals--because they will not be equally productive. It is discrimination that stems from profit-motivation, not malice or bias. It is allowing the best player, regardless of sex or race, to represent the U.S. in Davis Cup competition. Though "economic discrimination" may be equally repugnant to civil rights leaders and the champions of woman's suffrage, even those of us who are sympathetic to egalitarianism must grant that not to impose "economic discrimination" will injure the would-be discriminator in some way.

Firms often commit "economic discrimination," while at the same time following the objective principle of maximizing production at least cost. The objectivity of discrimination is most trustworthy if based on the functional requisites of the position. When hiring, a housing contractor will discriminate between an experienced carpenter and a store clerk, and rationally so. Unfortunately, the functional requisites are not always so clearly defined, and function is not always distinct from frill. For example, an executive's demand may be for a female typist because typists are expected to be women, even though a man might be equally productive: this would be "exploitative discrimination." The benefits from "exploitative discriminations," if there are any, are more psychological than economic.

In the labor market, "economic discrimination" will arise predominantly on the demand side. Employers will attempt to optimize their production function by hiring the factors seemingly most qualified. Any observer unaware of the non-objective functions used in the selection of an inferior factor would conclude that exploitative discrimination had occurred, when in fact it may not have. Economic discrimination is thus observable, but unclearly so; attributable, but uncondemningly so.

"Exploitative discrimination" may arise from the actions of either demand or supply. If it is demand oriented it is indubitably discrimination in the popular sense, but is difficult to discern as such. Supply oriented exploitative discrimination is observable and measurable, and it is usually more acceptable to champions of egalitarianism. If two jobs are available, one providing greater monetary net behefits (defined as "real" wages and benefits in excess of costs) and an employee accepts the lower paying one, knowing that it is such, he obviously has based his selection on some subjective criterion. He has discriminated against the higher paying employer. The minimum value of such discrimination, the minimum value imputed to the psychological benefits, is the monetary differential rejected by the individual.

Before attempting to discover the existence and extent of any discrimination, it will be enlightening to reveal some of the differences, both inherent and accrued, which distinguish men from women, Negroes from whites, and religious from non-affiliates.

DISCRIMINATION AGAINST WOMEN

Jessie Bernard has conveyed much of the female status in her book, Academic Women.[1] In summary, she reveals that women faculty come from higher socio-economic backgrounds, are older, more intelligent, more "humanistic" in discipline orientation, less aggressive, do not always aspire to reach the "charmed circles," and have family responsibilities. These latter result in women restricting their search to areas in the wake of their husband's movement. Child-bearing and housekeeping are roles which are concomitant and often conflicting with the role as a professor. This, coupled with the preference for teaching rather than research, results in a less than professional committment.

There are very few women who are willing to accept the dual role. Women comprise only 18% of the Academic Laborforce.[2]

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[1] Jessie Bernard, Academic Women (University Park, Pa.: The Pennsylvania State University Press, 1964), passim.

[2] COLFACS. Also, they represent the same percentage of all movers, according to our survey.

In 1962, they earned 36% of all degrees conferred, yet 85% of these women earned the baccalaureate degree whereas only 0.7% earned a doctorate, a figure which had been stable for the six years preceding 1962.[3]

Table 1. Remuneration: Newly Hired Men Versus Women

VARIABLE	MEN	WOMEN
Academic Rank:*		
Instructor	66%	34%
Assistant Professor	87%	13%
Associate Professor	87%	13%
Full Professor	91%	9%
Average Income (only persons who received their last degree in the decade following World War II)**	$11,650	$11,100
Average Salary (only last year's students emerging from top 20% of IHE's)**	$ 8,100	$ 7,300
Average Teaching Load (in hours)	10.4	12.0
Quality of Hiring IHE:		
Top 10%	91%	9%
0%-20%	88%	12%
20%-40%	86%	14%
40%-60%	84%	16%
60%-80%	80%	20%
80%-100%	79%	21%
Average No. of Job Offers	2.2	1.7

Source: Survey data.

*/The distribution by sex and academic rank for all faculty, not just newly hired ones, are in accord with these data. The source is COLFACS.

	MEN	WOMEN
Instructor	71%	29%
Assistant Professor	79	21
Associate Professor	85	15
Full Professor	92	18

**/These narrowly defined groups are used in an attempt to keep constant quality and experience.

Rates of remuneration. Women are discriminated against. They are paid lower salaries (at least to start) and lower academic rank but are assigned heavier teaching loads. They fill disproportionately high percentages of the positions at the least prestigious schools and are underrepresented in the most prestigious ones. As a rule they have fewer alternative job options from which to choose. These data are summarized in Table 1.

Discrimination exists. The question is, "Why?" Is the discrimination of the exploitative or the economic variety? There are at least three arguments for the existence of the economic variety.

(1) Women are less qualified and less committed to an academic career. This is perhaps the strongest argument. One of the major reasons that women are paid less is that they produce less: their productivity is lower. Male faculty, on the average, increase educational output more.

Much of the evidence in support of the argument is summarized in Table 2. By all indexes of quality, women appear to offer less productivity than men. Only half as many have earned their Ph.D.'s.

Table 2. Quality of Supply: Men Versus Women

INDEX OF QUALITY OF SUPPLY	PERCENTAGE	
	MEN	WOMEN
Holders of Doctorate Degree	50%	25%
Orientation:		
Spend More Time Teaching	73	88
Spend More Time Researching	11	2
Publications:		
None	50	77
More Than 10 Articles	14	4
Quality of Graduate School:		
Top 20%	45	37
Bottom 40%	12	18
Experience: Faculty Last Year	33	28

Source: Survey data.

Women have considerably less interest in research, the type of activity demanded by the top quality schools, and more interest in teaching, which tends to be stressed most at the lower eschelon institutions. Their interests show in the comparative publication records: the portion of big publishers among men is over three times that of women and the portion of women who have published nothing is 27% greater than that of men. Moreover, women are less experienced and are more often educated at the lesser schools. Furthermore, it may be argued that the large differentials in starting salaries (Table 1) are not exploitative discrimination, but instead represent the rational recognition by IHE's that they are taking a bigger gamble on whether or not the new hiree is professionally committed. The employers realize that one-fourth of all women Ph.D.'s leave the labor-force, a percentage that is much lower for men.[4]

It may also be argued, with Caplow and McGee, that even when women are equally qualified the nature of the products they produce are not as prestige-giving to their IHE employer. To quote, "...women tend to be discriminated against in the academic profession, not because they have low prestige but because they are outside the prestige system entirely... Women scholars are not taken seriously and cannot look forward to a normal professional career."[5] This suggests that women are not only quantitatively less productive but also qualitatively so, as the quality is judged by the community of scholars.

Extending the argument further, it may be that the women, with their emphasis upon teaching, are of more economic value to the poorer schools. The types of products that they would be asked to produce at the top-rated schools are not ones desired, whereas the lower eschelon schools which emphasize teaching are willing to pay more for their services.

All of these arguments simply show that women should earn less because they are less productive. They do not indicate how much less. It may be that, even after the differential abilities of women are accounted for, women are hired less than they should be by the better schools. To measure the extent of exploitative discrimination, let us assume that the primary ability desired of supply by IHE's, especially the best ones, is an ability to publish and that actual publications are an indication of this ability. Though this certainly is not the only indication of ability, it is significant and is one of the best simple

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[3] *National Education Association Research Bulletin*, vol. 42, no. 2 (May, 1964), pp. 45-46.

[4] Jessie Bernard, *op*. *cit*.~~, p. 66.~~

[5] Caplow and McGee, *op*. *cit*., pp. 111, 226.

measures that can be devised.[6] All IHE's, we have assumed, want to hire publishers. But not all schools are able to hire as many publishers as they would like, for a large portion of supply has not published.

Every IHE has three pools of supply that it may draw upon: big publishers (10 or more articles), small publishers (less than 10 articles), and non-publishers. The best IHE's, the top 10% schools, draw 29.1% big publishers, 40.1% small publishers, and 30.8% non-publishers. If the top 10% schools were not discriminating (exploitatively), they would be indifferent whether they drew a man or a woman from any one of the pools. They would reach into the big publishers pool and draw out 29.1% of their supply, 1.6% women and 27.5% men (1.6 plus 27.5 equals 29.1), since 5.6% of the big publishers are women. Similarly, they would reach into the small publishers pool and draw out 40.1%, 4.0% women and 36.1% men. And they would draw out 30.8% non-publishers, 7.0% women and 33.8% men. Adding the percentages of women together (1.6 + 4.0 + 7.0) we find that if the top 10% had not discriminated they would have hired 12.6% women. This figure appears in column 2 of Table 3. Column 1 of the same table shows that in fact of the persons hired by the top 10% schools only 8.8% are women. Exploitative discrimination exists, for the top 10% should have hired a higher percentage of women.

Similar figures are calculated for all eschelons. They indicate that the top 60% of all IHE's discriminate against women by hiring too few of them, even after accounting for their differential research productivity.

From all these figures the conclusion that must be reached is that, though some of the discrimination against women pursued by the top-rated schools is due to the fact that women are less productive, not all of it is. Some of the discrimination is of the exploitative variety. The discrimination by top schools is both economic and exploitative.

(2) Women express a preference for the schools that pay the least and are the least prestigious. Though they could go to the more prestigious and better paying schools, they choose not to do so. Thus, exploitative discrimination exists but it is the women who discriminate against the employers, not vice versa.

In the first place, women place constraints upon the types of jobs that they will accept, constraints that are not as common among men. For example, the married woman is often unwilling to consider any job that is not within commuting distance of her husband's employment.

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[6] Although other measures might be used (e.g., the Ph.D. degree), the results are amazingly similar.

Table 3. Actual Hirings Versus Non-discriminatory Hirings, by Quality of IHE

QUALITY OF EMPLOYING IHE	ACTUAL PERCENTAGE OF WOMEN HIRED	PERCENTAGE OF WOMEN THAT SHOULD HAVE BEEN HIRED IF EMPLOYMENT POLICY WERE NOT EXPLOITATIVELY DISCRIMINATORY*
Top 10%	8.8%	12.7%
10%-20%	12.4	14.4
20%-40%	14.0	16.2
40%-60%	15.9	16.3
60%-80%	19.9	17.8
80%-100%	21.1	19.2

Source: Survey data and Quality Index.
*/ Method of calculation is explained in the text.

Even within the geographic area, the type of job desired by a woman may be quite different than that desired by a man. Desiring to assume the dual role of college teacher and homemaker, many women may feel that the workload requirements of a major university are not compatible with their dual role. Late nights in the laboratory, midnight "runs" on the computer, frequent travel to conventions to deliver papers, long hours in the library perusing professional journals and other publications are not compatible with the homemaker role. As indicated by our finding that 80% of the women spend more time teaching than researching, women want to teach. Women are not subject to the same prestige motivations as men, Jessie Bernard argues, and frequently do not aspire to the charmed circle IHE's. Women actually prefer to accept jobs in IHE's that emphasize teaching and do not expect research.

It is difficult to explain the fact that 41% of the staff at women's colleges is female, compared to only 3% at men's schools and 4% at coeducational IHE's.[7] One plausible explanation of the overhiring of females by women's colleges is that the hiring IHE's feel that teaching effectiveness is increased when teacher and student are of the same sex and, in order to get the relatively few women in the market, they pay them more than they could earn at other IHE's. Though plausible, the statistics do not bear out the hypothesis. Women's colleges, on the average, pay men $1200 more than women. Not only do the women's colleges pay less to females than males but, of the four groups of IHE's considered in Table 4, women's colleges are the second worst discriminators, paying men 16.8% more than women. Furthermore, after adjusting for differences in ability to pay (by drawing a sample of coed schools matched in ability to pay with the schools in the women's college category), females are paid less by women's schools ($7250-$7150) and are (proportionally) discriminated against more.

Table 4. Salaries Paid to Men and Women by Selected Men's, Women's and Coed Schools

CATEGORY OF IHE*	MEN	WOMEN	MEN PERCENTAGE HIGHER
Women's Schools	$8350	$7150	16.8%
Men's Schools	9350	7200	29.9
Coed Schools I	8300	7250	11.4
Coed Schools II	9700	8450	11.5

Source: Survey data.
*/Data are based on the new faculty at 10 schools in each category. The schools in the category, "women's colleges," and those in "coed schools I" are matched pairs, matched according to prestige level. The same is true for "men's schools" and "coed schools II."

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7. These percentages are for only selected groupings of predominantly male, predominantly female, and coed institutions; the sample is not a balanced one.

Finding that differential incentives offered by employers is not the reasons why women are concentrated in women's colleges, we must offer the hypothesis that women prefer [illegible] to work in women's colleges. At the same salary women will prefer to teach in an IHE where the students will be of the same sex. In other words, women will accept a lower salary in order to teach at a woman's college. That is, women exploitatively discriminate against men's and coed IHE's.

Since women's colleges tend to emphasize teaching, to pay low salaries, to schedule large teaching loads, and to be rated relatively low in the prestige hierarchy, it is not surprising that when women are compared with men they appear to be discriminated against exploitatively by employers. The fact is that only part of the discrimination is employer-initiated.

Just as the feminine preference for women's colleges means that they will receive less remuneration , so also does their preference for emphasis upon teaching. The universities where research is emphasized tend to be the IHE's that offer the most favorable remunerations, whereas the salaries and teaching loads in the colleges where the stress is upon teaching tend to be less favorable.

Much of the apparent discrimination against women is self-imposed.

(3) Technical explanations. There are two "technical" considerations that also help explain why women are remunerated at lower rates than men. They need only be mentioned. First, women tend to be concentrated in the low paying disciplines. Disproportionately few women are in the high paying, excess demand, scientific disciplines. Secondly, partly because of the concentration of women's schools, disproportionately high numbers of women are concentrated in the lowest paying region, the North Atlantic.

Implications. Each of the three points presented above indicates that not all of the discrimination against women evolves from exploitative discrimination by employers. Part of the difference in rates of remuneration can be explained by the lesser productivity of women (economic discrimination), part by the preference of women to teach at IHE with low abilities to pay, and part by technical considerations. Women are not always located in the poorer schools because they could not have the opportunity to be elsewhere.

Regardless of the cause of the concentration of women in the poorer schools, it is interesting to reflect upon the implications of such a distribution. The situation as it exists, the concentration of women at the poorer schools, may be an optimum allocation of resources. In a qualitative study conducted at the Pennsylvania State University, it was found that "women tended to be relatively more successful with less able students, as measured by college aptitude tests, than with the abler ones. They were relatively better than the men with the students of average aptitude, but not as good with the superior students."[8]

Since the poorer students tend to be located at the poorer schools, it may be desirable that women are there also.

DISCRIMINATION ACCORDING TO RELIGION[9]

Like women, teachers of the Catholic faith are remunerated at lower rates than others. Though Protestants earn more than Catholics, they earn less than teachers of "other"[10] faiths. These differences are significant for all aspects of compensation: salary, teaching load, academic rank, and prestige level of appointment. For example, the average 9-10 month teaching salary earned by Catholics is $7700, by Protestants $9000, and by "others" $9300.

Again, in light of the discrimination against Catholics and (to a lesser extent) Protestants, it is appropriate to ask, "Is the discrimination exploitative or economic?" and "Is the discrimination initiated by demanders or suppliers?" As with discrimination by sex, the answers to both of these questions are somewhat ambiguous.

Part of the discrimination is employer-initiated and is economic. Employers tend to give hiring preference to persons of the same faith as the IHE and to discriminate against persons of other faiths. The tendency is strongest in the Catholic schools but evident in all. Developing an index similar to that used in

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8. Jessie Bernard, Academic Women, pp. 253-255.

9. These data are based upon a selected sample of schools which are probably slightly better than all schools in the sample. The absolute salaries are probably, therefore, slightly overstated--but the differentials, which is what is important here, should not be affected.

10. Other includes non-Christians and agnostics. This group is 36% of the sample.

11. Throughout this study, full-time members of religious orders who are also faculty members are not included.

Table 3, it is possible to compute the percentage of staff that would be of the same religious faith as the school if hiring were non-discriminatory. These figures are presented in column 2 of Table 5. When comparing the percentage that "should be hired" with the percentages "actually hired," the evidence shows that Catholics schools are overhiring Catholics, Protestant schools are overhiring Protestants, and public and non-demoninational schools are hiring more than their share of agnostics and non-Christians. Discrimination is in favor of persons of the same faith. However, this discrimination need not be exploitative. Many of the smaller denominational schools have objectives other than the production and distribution of factual knowledge. They desire also to inculcate in their students attitudes toward life and living. They attempt to convey faith as well as fact. It would seem that a strongly religious Physics teacher might convey something of the meaning of religious faith to his students and make more effective the teaching in religion and philosophy courses and in student chapel. Here the physics teacher of the same faith is providing an "external benefit,"

Table 5. Actual Hiring Versus Non-discriminatory Hirings, by Religion*

CONTROL OF HIRING THE	ACTUAL PERCENTAGE OF ALL HIRES	PERCENTAGE OF SAME FAITH THAT SHOULD HAVE BEEN HIRED IF EMPLOYMENT POLICY WAS NOT EXPLOITATIVELY DISCRIMINATORY
Catholic Schools Hire Catholics	67%	15%
Protestant Schools Hire Protestants	75	54
Public and Non-Denominational Hire Agnostics and non-Christians	37	33

Source: Survey data.

*/ All data exclude faculty paid directly as a member of a religious order.

one marginal to his primary contribution of teaching the substance of physics, whereas such benefit would not be produced by a man of a different fiath or of less religious conviction. Similarly, it may be argued that Catholic teachers are more productive in Catholic institutions than are Protestants, for the persons of Catholic faith are better able to mingle with the priests who are their faculty colleagues.

Table 6. Actual Hiring Versus Non-discriminatory Hiring, by Undergraduate Degree of Hirees.

CONTROL OF HIRING IHE	ACTUAL PERCENTAGE OF ALL HIRES	PERCENTAGE THAT SHOULD HAVE BEEN HIRED IF EMPLOYMENT POLICY WERE NON-DISCRIMINATORY*
Catholic Schools Hire Persons with Baccalaureate from a Catholic School	45%	5%
Protestant Schools Hire Persons with a Baccalaureate from a Protestant School**	46 (29%)	19 (4%)
Non-denominational Schools Hire Persons with Baccalaureate from a Non-denominational School	38	76%

Source: Survey data.

*/ Column 2 totals 100%. Five percent of all job changers held Baccalaureates from Catholic schools, 19% from Protestant schools, and 76% from all others.

**/ The percentages in parentheses refer to specific denominations (e.g., Methodist Baccalaureates hired by Methodist schools, Presbyterians hired by Presbyterian schools) whereas 46% and 19% refer to all Protestants grouped together (e.g., Methodist Baccalaureates hired by Presbyterian schools as well as by Methodist schools.

Table 7. Actual Hiring Versus Non-discriminatory Hiring, by Control of Previous School.

CONTROL OF HIRING IHE	ACTUAL PERCENTAGE OF ALL HIRES	PERCENTAGE THAT SHOULD HAVE BEEN HIRED IF EMPLOYMENT POLICY WERE NON-DISCRIMINATORY**
Catholic Schools Hire Person Away From Faculty of Another Catholic School	42%	5%
Protestant Schools Hire Person Away From Faculty of Another Protestant School*	33 (16%)	13 (4%)
Non-denominational or Public Schools Hire Faculty Away From Non-denominational or Public School	91	81

Source: Survey data.

*/ The percentages in parentheses refer to specific denominations (e.g., Methodist schools hiring away from other Methodist schools) whereas the 33% and 13% refer to all Protestant schools grouped together (e.g., Methodist schools hiring away from Presbyterian schools as well as other Methodist schools).

**/Column 2 does not total 100% because of rounding. Five percent of all job changers who were hired away from another teaching position came from Catholic schools, 13% from Protestant schools, and 81% from schools without a specific religious relationship.

Also evident is a tendency for IHE's to overhire (proportionally) college teachers with previous experiences at schools under the same control. As shown by Table 6, 45% of the new professors hired by Catholic IHE's earn their first degrees from a Catholic school in spite of the fact that teachers with Catholic Baccalaureates are only 5% of the movers. In Table 7, although only one-twentieth of the movers switching from one faculty to another leave Catholic schools, 42% of experienced faculty hired by Catholic IHE's comes from another school of similar control. Obviously, Catholic institutions are attracting disproportionate numbers of those with previous experiences in Catholic institutions. What is true of Catholic IHE's is also true of Protestant ones, and of the public and non-denominational IHE's. There are definite submarkets within the broad academic labor market. There are special channels through which IHE's may be brought into contact with individuals with previous experiences in their types situations. As with the preference for individuals of the same religious faith, IHE's probably have some economic justification for preferring to hire staff with "previous experience in a similar IHE." These professors will know what to expect and be less likely to leave after a year or so because they originally understand what their responsibilities will be. These professors, like individuals with matching religious faiths, are more likely to be in sympathy with the philosophy of life espoused by the institutions. These persons are likely to be more productive and less of a risk than persons who have not had the experience. To the extent that professors of similar experience are more productive, their preference in hiring represents economic rather than exploitative discrimination. To the extent that this is not the case, employers are discriminating exploitatively.

Discrimination is, however, two-sided. Just as employers may choose to discriminate by not offering jobs to certain individuals, so individuals may choose to discriminate by not accepting the offer that promises the greatest monetary net advantage. To what extent is the discrimination that exists due to the preferences of supply?

As a rule individuals tend to seek schools of their own faith, shown in Table 8. Even though only 6% of all job vacancies are in Catholic institutions, 29% of the Catholic job seekers find them. On the average, only 3% of all vacancies are in one of the four larger specific Protestant denominations; yet 11% of the Protestants find a job at a school sponsored by the church to which they belong. There is some evidence that not only are individuals more willing to locate at a school of their denomination--but also that they will do so at a lower salary. The average Protestant earns $500 less at a Protestant school than at one that is not sponsored by a Protestant denomination; and the average Catholic earns $200 less at a

Catholic school. This fact, more than any other, suggests that supply is exploitatively discriminating against IHE's sponsored by religious groups other than their own. It suggests that at least a portion of the difference in remuneration of Catholics versus Protestants versus agnostics and non-Christians results from the preference of supply.

Table 8. Acceptances: Individual Religion Versus IHE Control

RELIGION	PERCENTAGE TEACHING AT IHE's OF THEIR CHURCH MEMBERSHIP	PERCENTAGE OF ALL JOBS SPONSORED BY CHURCH
Catholic	29%	6%
Protestant I*	21 (11%)	15 (3%)
Non-denominational & Public	89	79

Source: Survey data.
*/Similar to Table 7.

In contrast with the teachers at non-denominational and public schools, the professors at church-related schools are more interested in teaching than research. They publish less and have earned the doctoral degree less often. Their interests are more student-oriented than profession-centered. As a result their schools do not rank as well on the Quality Index, which attempts to measure "prestige in the eyes of scholars." These data are summarized in Table 9.

In summary, the discrimination against Catholic and Protestant appears to be the result of all three types of discrimination. It is based upon lesser qualifications overall, the greater productivity of individuals working within familiar situations and situations that are consistent with their own beliefs, the different orientations of deeply religious professors, and the preferences of some professors to teach at schools sponsored by the church of which they are a member. One of the most vivid examples of the willingness of some professors to accept lower pay and to regard teaching at a school sponsored by their own faith as part of their Christian witness is one response which tells of a man leaving a $13,000 plus salary at a public university to accept $5,000 at a newly founded denominational school.

Table 9. Characteristics of Hirees by Various Controls of Schools

CONTROL OF IHE	PERCENTAGE NON-PH.D.'S	PERCENTAGE TEACHING ORIENTED*	PERCENTAGE WITH NO PUBLICATIONS	PERCENTAGE STUDENTS LAST YEAR	PERCENTAGE AT BOTTOM 20% IHE'S
Public	54%	77%	54%	40%	30%
Non-denominational	43	63	44	39	15
Catholic	65	78	64	41	40
Baptist	77	86	79	47	40
Presbyterian	54	86	69	43	25
Methodist	49	91	51	38	26
Lutheran	76	86	71	49	58

Source: Survey data and Quality Index.
*/Spend more time teaching than researching.

DISCRIMINATION BY RACE

Negroes, similarly to the religiously affiliated, may feel that they have a certain calling and a need to propagate a certain heritage. Thus a Negro-controlled school may make Negro faculty feel most comfortable. Their heritage will be more warmly received at Howard University than it would be at the

University of Mississippi. The students will have similar outlooks, which will make for better communication between student and teacher. The environment will generally be conducive to greater productivity for the Negro professor.

Unfortunately, our sample has not resulted in any significant data regarding the activity of Negroes. Rather than present any misleading data, the racial empiricism will be left for future research.

A study has recently been conducted, which compares the faculty at Negro colleges with the faculty at white colleges, and not Negro and white faculty.[12] The prominent results are the dearth of Ph.D.'s, (28% of the faculty), the predominance of female students (67%) and faculty (35%), twice as large as at white school, and the concentration of faculty among the low professorial ranks at the Negro schools. There is also evidence of salary and income differentials, as shown by Table 10.

Table 10. Salaries and Incomes at Negro vs. White IHE's

TYPE OF IHE	MEDIAN TOTAL EARNINGS	MEDIAN 9-10 MONTH CONTRACT SALARY
White Schools	$9,251	$7,863
Negro Schools	6,886	6,316

Source: Wright and Huyck, op. cit. p. 17.

CONCLUSIONS

Markets are balkanized by personal characteristics such as sex and religious preference. Discrimination, which does exist, is primarily the result of supply preference and the relative productivities of different types of workers. It is in most cases not based on exploitative actions by employers.

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[12] Patricia S. Wright and Earl E. Huyck, "Faculty in White and Negro Colleges" Health, Education, and Welfare Indicators, February 1965, pp. 16-30.

THE NON-ACADEMIC LABOR MARKET .... CHAPTER 13

Manpower capable of teaching at the college level is eagerly sought by employers outside of the academic world: for example, chemists are sought by chemical firms, mathematicians by transportation companies, political scientists by government. Because these non-academic employers compete with IHE's for the supply of graduate-trained personnel, it is necessary, at least briefly, to look at the relationships among markets, to assess the substitutability of labor employed by business, government and IHE's. The purpose of this chapter is to determine if there is a balkanization between academic and non-academic markets and, if so, to study the nature of the division.

EVIDENCE OF BALKANIZATION

Academic and non-academic positions offer different opportunities to an individual, so different that one might expect very little movement from one type of position to another. In teaching positions there is an unusual amount of independence, absence of direction from superiors, latitude in both the quantity and distribution of work hours, escape from the pressure of tight deadlines, and the opportunity to imbibe the cultural and intellectual prerogatives that go along with living in an academic community. There are the rewards of enlightened looks upon students' faces as the teacher unveils part of the knowledge of the past, of belated "thank you's" from students who later come to appreciate teaching devotion and skill, of the recognition involved in seeing one's name in print and later finding it again in the footnotes of other's works, of finding a previously unknown truth, even an obscure one. For most non-academic jobs both the tasks and the compensations differ. Output must have more immediate use; deadlines are more necessary; work is often more timely. Self-discipline is less necessary; progress is more obvious; often power is greater; rewards are more tangible and conventional.

According to a recent study of salaries paid to Ph.D.-qualified economists hired through a convention placement service, the government pays $9,800, business pays $10,400, and IHE's pay only $8,400. The differentials are larger for non-Ph.D. economists.[1] A 1964 report from the U.S.D.L. shows government biochemists earn $9,025, compared to $6,800 in academia.[2] The existence of work load differentials and salary differentials is strong evidence that the academic and non-academic markets are divided.

Further evidence of balkanization is the type of offers received by persons entering academic positions. We asked our sample to list all of the offers they considered seriously. Analysis of these lists indicates that 9 out of 10 offers are from academic employers. Only 8% are for non-teaching positions, and surprisingly few offers come from primary and secondary schools (only 3%). Seven out of eight new college professors never consider any non-academic offer. Only 5% consider high school teaching and 11% consider other types of non-academic employment. Most college teachers obviously do not envision themselves as candidates for jobs outside college teaching.

Though our data are limited, the opposite appears to be true also: most persons employed outside the academic community do not envision themselves as supply to IHE's. This vision may be based upon a basic preference for non-academic work or on a self-concept of their incapability for college teaching. In any case, it means that 35% entering teaching from high schools do nothing to seek their jobs and must be recruited by a needy employer and that 43% of the ex-government workers must be sought after. These figures become even more meaningful when compared with the fact that only 30% of those already in academic had to be sought after. Government workers and high school teachers are even more reluctant participants in academic labor markets than are those already committed to teaching. It implies that the former may be committed to another market (the market for government workers or the market for high school teachers) instead.

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[1] Edwin C. Gooding, Placement Services for College Teachers, Volume I of this report.

[2] Occupational Outlook Quarterly, February, 1964, p. 15.

Several students of academic labor markets have indicated that the division between the academic and the non-academic is largely imposed by the community of scholars. To quote Caplow and McGee:

> Although non-academic positions ....may pay much more than what their incumbents could ever earn in an academic post, the acceptance of such employment is always interpreted by a man's colleagues as moving down in or out of the profession...men who take this path...are rarely able to return to the academic employment, and when they do, any minimally respectable academic position is regarded as an opportunity for them. For the men of the major league, the route out of the academic profession is generally a one-way street.[3]

In the same vein, Everett C. Hughes states "the general disposition of the faculties...is never to let anybody come back to the academic world if he has been out and has had a taste of some other kind of life. He is a traitor...."[4]

BREAKING THE BARRIERS

There is, however, some movement from out to in: 8,650 persons moved into the market in 1964-65. In spite of the competition of higher offers from non-academic employers, IHE's draw as many experienced (non-students) staff from outside the academic community as from within. The sources are broken down in Table 1. The man entering from business sacrifices $2,650 on the average in accepting academic employment. The man from lower eschelon teaching sacrifices $1,250 and from government he sacrifices $1,000.[5] Evidently many feel that the non-monetary aspects of net advantage outweigh the income differential.

There are, of course, large variations in the extent to which individuals consider switching between academic and non-academic employments. The prime consideration seems to be the availability of opportunities outside academia which allow for the preservation of academically relevant skills. The trained

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[3] Theodore Caplow and Reece J.McGee, _The Academic Marketplace_ (N.Y.: Basic Books, Inc., 1958), p. 150.

[4] Everett C. Hughes, _Review of Economics and Statistics_, August, 1960, p. 121.

[5] These figures represent the difference between highest income offered and the one accepted.

Table 1. New College Teachers From Outside the Academic Community

LAST YEAR'S ACTIVITY	NUMBER HIRED BY 4-YEAR IHE'S
Primary and Secondary School Teachers and Administrators	2800
Government (excluding military)	950
Business	1800
Administration in Higher Education	300
Military Service	250
Foundation Employees	150
Others (including post-doctoral fellowships, housewives)	2400
TOTAL	8650

Source: Survey data and COLFACS study.

chemist or engineer has many opportunities for work in non-academic occupations. Social scientists, notably economists and political scientists, can often function outside academia without losing their identity as economists or political scientists. On the other hand, the English Ph.D. is trained in the criticism and interpretation of literature and in writing. The possible non-academic alternatives are limited to positions with newspapers, magazines, and publishing houses. In any other occupation, the English doctorate is subsumed under the functions of non-academic jobs, in which the English Ph.D. will not be continually using tools of his profession. Thus many such people will not be willing to accept non-academic employment. In general the word disciplines have the least association with non-academic employment while the data disciplines have a much stronger attachment to non-academic life.[6]

Table 2. Characteristics of Hirees and Hirers, by Non-academic Sources of Supply

LAST YEAR'S ACTIVITY	PERCENTAGE WITH PH.D.'S	PERCENTAGE BIG PUBLISHERS*	PERCENTAGE HIRED BY TOP 20% IHE'S**
Primary and Secondary School Teacher	20%	5%	3%
Business	44	13	10
Government	58	21	13
Foundation	79	23	48
Other***	58	20	17
College Faculty	63	20	15

Source: Survey data.

*/ Ten or more articles.

**/ This means that 3 % of the primary and secondary school teachers who moved to a 4-year IHE moved to a top 20% school.

***/ Includes college administrators, military personnel, housewives, unemployed, postdoctoral fellows, and others not easily identified.

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6. National Education Association, Teacher Supply and Demand in Universities, Colleges, and Junior Colleges 1961-62 and 1962-63 ("Higher Education Series: Research Report 1963-R3"; Washington, D.C.: N.E.A., 1963), pp. 80-83.

TWO VERY DIFFERENT FLOWS

There are two distinct types of individuals who are drawn back into the academic community after having once left it for employment elsewhere. First, there is the "sought after" group, comprised mainly of publishing scholars who have broad experience in non-academic work that is closely related to their specialty (e.g., a teacher of architecture with experience in an architectural firm) or who have been loaned temporarily to the non-academic community as a long term consultant (e.g., a member of the Council of Economic Advisers). The second group, the supply of last resort, is comprised mainly of high school teachers who are drafted into college teaching as a desperate solution to the staffing problem of some little known college. Between these two groups there is probably a third, the "qualified activists," comprised of those who are disenchanted with the non-academic life and desire to return to the contemplative atmosphere of academia. They are no doubt qualified, but they must be active participants in the labor market if they are to find jobs.

As shown in Table 2, most of the hiring of the supply of last resort is concentrated in IHE's other than the top 20%. This is not surprising in light of the poor qualifications of the average person drawn from this source of supply: only 20% have earned Ph.D.'s and only 5% have published 10 or more articles. In sharp contrast, the ex-foundation employees who come back to education with strong records of publication are sought after and hired by the top schools.

DISCIPLINARY INFLOW

All indications are that the largest groups of entering non-academicians come from the data-oriented disciplines. These are the disciplines which have the greatest contact with non-academic circles when first emerging from school and, consequently, if only by mere numerical strength they should dominate the return to academia. They are also the disciplines which often do not lose the professional status gained in graduate school. Engineers and scientists are constantly using their professional "tools," and can thus be easily re-academized. In contrast, the word disciplines often have little place outside academia. Their professional skills often lead to pragmatic enterprises. Whatever research orientation a linguist may have acquired in graduate school, it becomes rusty in most non-academic pursuits.

Whereas 31% of all college teaching vacancies in the data disciplines are filled by persons from outside academia, only 26% of the persons in the word disciplines are drawn from these same sources, and only 19% in the neutral disciplines. The percentage drawn from the outside by the word disciplines is lower than for the neutral disciplines when education, which draws heavily from the high schools, is excluded. As shown in Table 3, 61% of all hiring from outside academia in the word disciplines come from the high schools, almost all of them in education. In the social scientific neutral disciplines, government is a proportionally more important source of supply than in either of the other two groups. And in the data disciplines, postdoctoral fellows and business are the major sources of supply.

Table 3. Sources of Non-academic Supply, by Discipline

LAST YEAR'S ACTIVITY	DATA FIELDS*	WORD FIELDS*	NEUTRAL FIELDS*
High School**	15%	61%	20%
Business	28	5	7
Government	7	2	16
Foundation	3	--	2
Other***	47	31	55
TOTAL	100%	99%	100%

Source: Survey data.

*/ Data fields: biochemistry, engineering (chemical, civil, electrical, mechanical), mathematics, chemistry, earth sciences, physics.
Word fields: education (elementary, secondary, services, physical), English and journalism, art, music, classical literature, French, counseling and guidance.
Neutral fields: general biology, general zoology, economics history, political science, sociology, clinical psychology.

**/ "High school" includes both primary and secondary schools.

***/ This group includes academic administrators, military personnel, housewives, postdoctoral fellowship holders, unemployed, and "others" less easily identified.

CONCLUSION

The contact between academia and non-academia is stronger than is normally believed. There are, however, two distinct areas of communication. The first is between high quality schools and qualified supply, and is similar to the necessary contact between the excess demand disciplines and the qualified supply. The second is the relationship between the low quality schools, the excess supply disciplines, and the lower quality non-academic supply.

Contact between these two worlds means either movement induced along the supply curve or movement of the entire curve. The evidence is not specific or conclusive, but it suggests that the high quality schools and the data disciplines narrow the salary differentials and consequently increase their supply by moving along the curve. At the same time there is some qualified non-academic supply which has become disenchanted with the non-academic world and makes itself available to the high quality schools, causing the supply curve to these schools to shift outward. The low quality schools also experience both movement along the curve and a movement of the curve. The movement along the curve is due to their narrowing some of the differentials, but their primary experience is a shift of the entire curve, due however, not to the change in the preferences of supply, but to their own lowering of hiring standards.

A THEORY OF THE MARKET MECHANISM ....Chapter 14

Communication in academic labor markets is steeped in tradition. The professional ethic condemns active job seeking, ridicules the use of formal employment liaisons, and accepts only the most diplomatic overt approaches to the market. Arbitrage among markets is made difficult by the traditions. As the system of higher education has expanded to include more institutions and more personnel, the mechanisms for allocating the personnel among these institutions have lagged behind. Today communication in academic labor markets is structured in ways which may well have been adequate in the Nineteenth Century and may well be adequate for modern countries which have less scattered systems but which are grossly inadequate to the modern United States.

Knowledge of candidate availability is not a coherently organized and closely structured body of information. Instead, availability is carried circuitously and precariously along partially formalized grapevines. Hints in convention conversation, postscripts addended to letters flowing naturally among professional colleagues at different institutions are the channels of communication, at least for the better schools within academia.

The informal market flows have not, however, met the needs of collegiate employers who are only on the fringes of the scholarly world, especially the smaller 4-year and 2-year colleges. Similarly, the underqualified candidates (e.g., the non-Ph.D. holders) have experienced frustration when the sheer volume of information forced upon the informal market mechanism resulted in a non-explicit refusal to serve these candidates. In response to the needs expressed by both sides of the market, more formal procedures for communicating needs and desires have recently evolved. Job brokers or market liaisons have developed.

At the present time the market mechanism is a curious blend of tradition and reality. In response to the need, over 2,500 "placement centers" are now in existence. Among them are departmental offices in most of the nation's graduate schools, college placement offices, denominational placement services, public employment agencies, fee-charging private employment agencies, placement operations funded by various types of professional associations, and various specialized agencies. Despite the fact that a large segment of eligible labor supply does not know about the existence of many of these liaisons, their usefulness is attested to by the fact that over 25% of the jobs taken in 1964-65 were found via one of them. The placement system may well be a crazyquilt of partially formalized and little known liaisons, each functioning to service its own special segment of the academic labor market, but the system is also widely used.

Yet, by many, help in finding an academic job from a "formalized liaison" is sought out with a sense of guilt and a feeling of personal inadequacy: the tradition lives on. Overt job seeking by registering one's availability in some formal way with an impersonal liaison is still not highly respected. Individuals who can afford it still choose not to use the formal liaisons. There is a certain amount of snobbery associated with the disuse of the formal placement system.

It is the purpose of this chapter and this section to indicate in rather specific terms how the market mechanisms are currently functioning and why, to offer explanations of why some professors seek jobs by different methods than others, to indicate how and why the respected informal placement system and the non-so-respected formal system remain in existence side-by-side.

A THEORY OF JOB SEARCH

In developing a theory of job search, it is convenient to think in terms of the costs and benefits of the search to the individual, since it is the individual candidate who must decide the extent and character of his pursuit of alternative employment. Every individual must decide whether to seek a job, and if so, by what methods and how extensively.

The job seeker must order search methods and then determine how far down the order he should proceed. The most promising methods which are the least inconveniencing will, of course, be pursued first; the least promising pursued last. Each search method has its sets of costs and probablistic benefits. It is on the basis of these that individual decisions must be made.

Let us look in some detail at first the cost and then the benefit side of the decision calculus.

Costs. The costs of job search are of several types. First, time costs are involved in conveying one's availability, even if it is only a telephone call to a personal friend or a letter. The time required for some search methods can be considerable. An example would be attending a convention exclusively for the purpose of finding employment. Job finding may require the actual outlay of personal funds, such as the finding fee expected by private employment agencies or the unreimbursed travel expenses for conventions. Thus, actual expenditures are a second specie of costs.

Opportunity costs, both present and future, are also involved. If a man now holds a good job but knows that his present employer will fire him if he searches for another job, the costs of losing a job adjusted for the probability that a better job will not be found by the given method must also be accounted for. Another example of present opportunity costs is that a good job offer may expire if a man chooses to take the time required to pursue still another method of searching out a job alternative. As for future opportunity costs, there comes a point beyond which friends and former professors grow tired of constantly aiding a man in his job changes. Also, there is a point at which a man's history shows so much mobility that he is no longer sought because of the almost certain prospect of his future mobility. There are other costs involved, but the ones discussed above are the major ones.[1]

A summary of the cost side of the calculus is offered by the following equation:

$$C^j = T^j + O^j + F^j + E^j \qquad \text{EQUATION 1}$$

where T^j is the time cost of pursuing jobs via method j;

O^j, the present opportunity costs;

F^j, the future opportunity costs; and

E^j, the actual expenses.

The equation is unique to each individual in the sense that each individual has different expenses of travelling to conventions, different attitudes of present employers, and the like. Each individual faces a series of C-equations, one for each type of method that he might use: one for contacting undergraduate professors, another for consulting a college placement bureau, still another for enlisting with a private employment agency, and so forth.

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[1] The remainder of this chapter is double spaced to improve readability of the sub-scripts and super-scripts.

The C^j of Equation 1 is properly interpreted as the total cost to an individual of a job search via method j, on the assumption that no other method has been tried previously. Method j is the first method tried. Actually there is an entire set of C^j's that vary according to what other methods (j's) have been tried previously. Let us denote "first round" tries by C^{j1}. Then we can note the cost of pursuing method j after method "j + 1" has been pursued by C^{j2}, after method "j + 2" has been pursued by C^{j3}, and after both methods "j + 1" and "j + 2" by C^{jk}.

If there are any economies of scale to job search, which I suspect there are, then we would expect C^{j1} to be greater than C^{j2}, and C^{j2} to be greater than C^{jk} where the k represents a combination of several methods.

Further refinements in the cost equation might be made, but the complications created do not seem to justify them. Even so, it is important to stress the simplicity of the cost situation that is implied by Equation 1. In the first place, it is assumed that the cost of using a given search method is of the once-and-for-all or lump sum variety. It is not possible to write some letters of inquiry, note that the response is not particularly good, and then write additional letters. The structure of the equation implicitly assumes only one set of letters, only one contact with one's graduate school, only one trip to a convention. Refinements for the extent to which various methods are used are not allowed for. This adjustment can be made by thinking of the second and third uses of the same method as entirely new methods, but these extensions are not pursued.

Secondly, Equation 1 implicitly assumes that all costs are knowable in advance. Although reasonably accurate advance estimates of T, E, and perhaps O seem probable, the range of error in the estimation of future opportunity costs must be quite large. Yet, even though accurate estimates of costs are not available, a decision-making individual must act as if they are. Thus, no adjustment has been included.

Benefits. Job searches broaden a man's job choice options. Searches have the dual purpose of informing the candidate of vacancies and employers of the availability of the searching candidate. By hunting, the candidate hopes to be hired into a job that is better than his best alternative without a hunt. Benefits from searches are, therefore, marginal increases in net advantage.

The marginal benefit of one particular type of job found by one particular method is the value of the found job minus the value of the best alternative before the search.

$$\hat{B}_i^j = A_i^j - A_{max}^{j-1} \quad \text{.} \qquad \text{EQUATION 2}$$

$\hat{B}_i^j$ = the benefit received from the ith job located by the jth method.

A_i^j = the value of the ith job located by the jth method.

A_{max}^{j-1} = the value of the best job in hand without pursuing the jth method.

The above equation is based upon a number of assumptions, not the least of which is that it is certain that job i will be found and offered the candidate if only he pursues method j. In reality, certainty does not exist and an adjustment is in order. Specifically, for the purposes of determining whether job search is worthwhile, it is necessary to estimate the probability that a job of a given benefit will be found. This probability is then used to weight the significance of the benefit in the decision-making calculus.

Let p_i^j represent the probability that a job of any given value, A_i^j, will be the best job landed by using any given method j. The p_i^j's are such that $\sum_{i=0}^{i=\infty} p_i^j = 1.00$. For example, if a man is certain to land a $7,000 job and 50% likely to land a $10,000 job and there are no other options, then the $p_{10,000}^j = .50$ and the $p_{7,000}^j = .50$.

The expected value of one particular search method is the sum over all types of jobs of the benefit of each job times the probability that that job will be the best obtained. Let $\hat{G}_k^j$ represent the expected value of a given search method j to individual k, then

$$\hat{G}_k^j = \sum_{i=0}^{i=\infty} p_i^j \hat{B}_i^j = \sum_{i=0}^{i=\infty} p_i^j (A_i^j - A_{max}^{j-1}) \qquad \text{EQUATION 3}$$

when, by definition, $\hat{B}_i^j = 0$ when $A_i^j \leqslant A_{max}^{j-1}$. The qualification that "$B_i^j = 0$ when $A_i^j < A_{max}^{j-1}$" simply means that jobs worse than the best before-search option are irrelevant: they will not be chosen and yet they will not be "in the way."

Since job search is not costless, an adjustment must be entered into Equation 3 if both benefits and costs are to be accounted for in calculating gain. Costsmust be incurred in the present period and represent a direct decrease in the value of the job found. Thus, in representing the value of the job i found by method j, it is necessary to subtract the cost of method j. The net value of job i is not A_i^j but $(A_i^j - C^j)$. Equation 3 therefore becomes--

$$G_k^j = \sum_{i=1}^{i=\infty} P_i^j B_i^j \qquad \text{EQUATION 4}$$

where $B_i^j = (A_i^j - C^j) - A_{max}^{j-1}$ when $(A_i^j - C^j) > A_{max}^{j-1}$ and $B_i^j = 0$ when $(A_i^j - C^j) \leq A_{max}^{j-1}$.

For illustrative purposes, assume that an emerging Ph.D. receives, without any search whatsoever, an offer of a $7,000 job from his undergraduate alma mater.[2] The problem faced by this graduate student is, in its simplest form, "what would be the benefit of registering with the college placement office?"

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[2] For simplicity assume that all benefits of all job offers discussed in this example are reflected directly in salary differentials. A concept of "net advantage" as developed in Chapter 19is by far more realistic and could, with little trouble, be used in this example. The advantage of using salary instead of net advantage is purely expositional.

Assume that registration is costless. Assume also that our graduate student is able to develop estimates that, as a result of his registration, there is about a 50% probability that the best job he will find and be offered is one paying \$6,000; there is a 40% probability that he will land a best job of \$8,000 and a 10% chance that the best job will be valued at \$9,000. Assume finally that all of the jobs under discussion are for one year only and that they will lead to jobs with roughly the same value one year hence.

In this example, j is the college placement office which will be indicated by "1." The best alternative job without a search, A^{o}_{max} , is the \$7,000 position at his alma mater. As shown in Figure 1, the jobs found by the search method, the i's, are \$6,000, \$8,000, and \$9,000. The benefit from the \$6,000 job is non-existent, for with no search he has a better alternative. The expected value of the \$8,000 job is .40(\$8,000-\$7,000) or \$400, and is represented in the diagram below by the rectangle shaded northeasternly. Added to the \$400 is \$200, the expected value of the \$9,000 job, to arrive at the total expected value from registering with the college placement office, \$600. The advantages of registering are here obvious and substantial.

Let us carry this example further. At the time our candidate had a job offer from his alma mater and had not registered with the college placement office, his real problem was not "what would be the gain of registering with the college placement office?" but rather "what would be the gain of pursuing each of the many different methods of job search--of writing letters, registering with a private employment agency, attending professional conventions, informing graduate school professors, and so forth?" To consider only one of these "other" methods, assume that at the same time that our hypothetical candidate had a $600 expected value from registering with the college placement office, he could estimate that if he wrote 25 letters to selected potential employers he had a 78% chance of landing a best job of $6,000, a 20% chance that $8,000 would be the best job found, and a 2% probability of locating and being offered a $9,000 job. Thus, the probabilistic gain from writing letters is $240, or the combined areas of the shaded rectangles in Figure 2.

Because $600 exceeds $240, if writing letters and registering with the college placement office were the only two methods of seeking jobs, the college placement office route would be chosen first.[3] Assume that the college placement route is chosen and that, as a result, the candidate lands an $8,000 job. Now the problem is, "what are the gains of writing letters?" The answer is shown by Figure 3: $20. The before-search alternative (A^2_{max}) is changed from $7,000 to $8,000 which causes the entire northeasternly area and a portion of the southeasternly area of Figure 2 to become irrelevant.

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[3] The two approaches might be chosen simultaneously. This possibility is explored at a later point.

Figure 1. Graduate Student With $7,000 Offer from Alma Mater: Placement Office

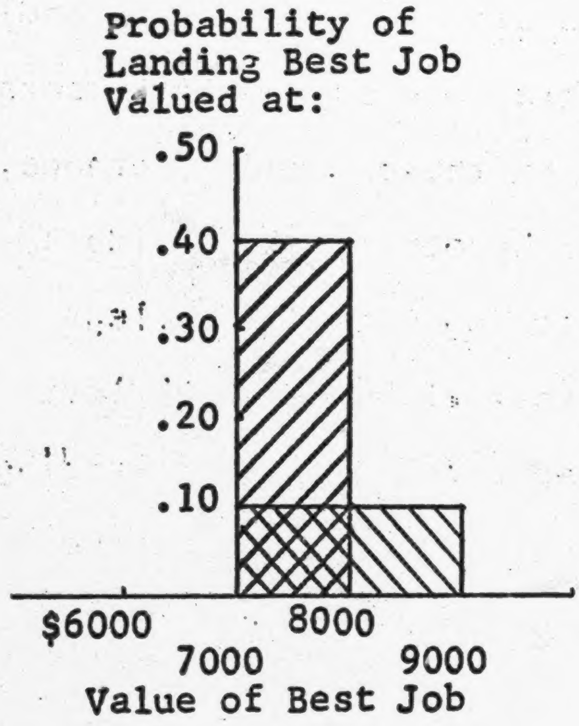


Figure 2. Graduate Student With $7,000 Offer from Alma Mater: Letter Writing

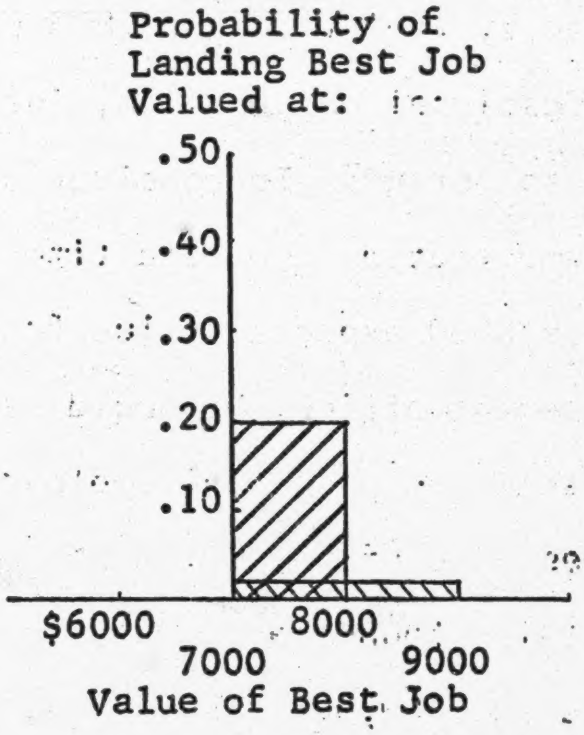


Figure 3. Graduate Student Letter Writing after $8,000 Job Found Through Placement Office

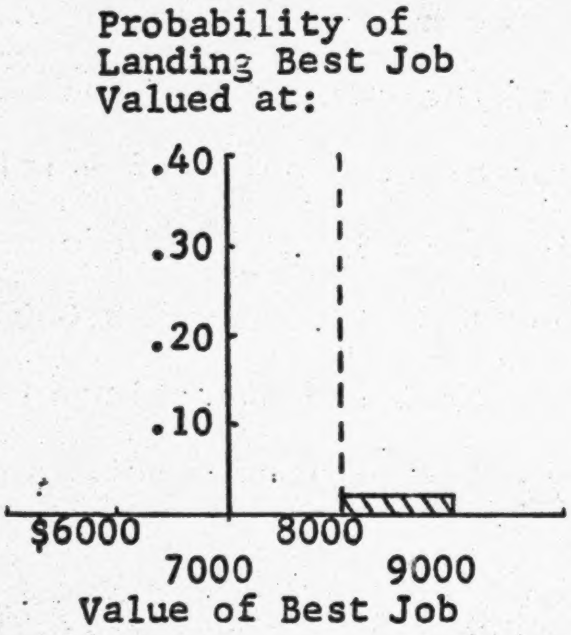
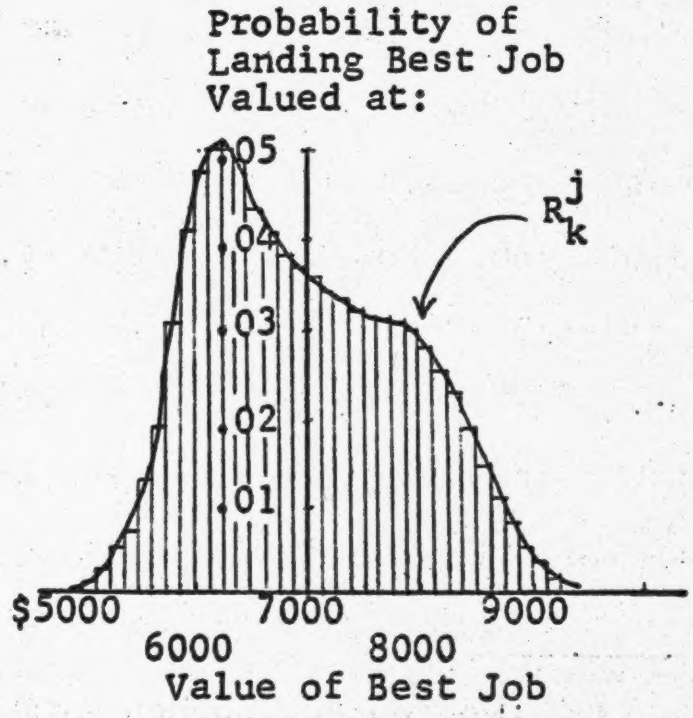


Figure 4. Graduate Student: Many Possible Offers



The example may be made more realistic by dropping the implicit assumption that writing letters is costless. Locating names and addresses, composing the letters and the actual process of typing involve time cost. Some opportunity costs, social costs, and actual expenses are also usually incurred. Assume these costs total $200. Following Equation 4, the costs should be subtracted from the $9,000 job, for they are variable in the sense that they are not borne if letter writing is not pursued. With this modification, the probabilistic gain of writing letters as a second method is .02 ($800) or $16.

Another step toward reality is to substitute "the present value of a future income stream" for "current salary." In essence this means dropping the assumption that the jobs discussed are for only one year and substituting the sum of the discounted annual values of jobs. The transition is an easy one. It is possible simply to regard the figures in the example as discounted values, not annual salaries. Correspondingly, the A's should be regarded as present values of future income streams.

And, it is desirable to abandon the limiting assumption that jobs are packaged in sets at $1,000 intervals. In actual fact, the present values of possible job offers probably vary continuously over a certain range. In addition to the $8,000 and $9,000 jobs, there are $8,500, $7,200, and $8,100 jobs and many others. Incorporating this change of assumption, Figure 1 takes on the step-like form shown in Figure 4, each step at a given probability so that the sum of the probabilities will equals 1.00. The steps are depicted at $100 intervals. Though present values of future jobs in fact vary continuously, it is somewhat specious to believe that an individual can have confidence in his estimate of differentials less than $100.

For expositional and algebraic convenience, the step function of Figure 4 will subsequently be represented by a continuous curve which passes through the mid-points. The curve will be referred to as R^j, for it is the probability distribution of gains received by using method j.

A brief digression on the shape of the R^j functions, the probability distributions, may be in order, since the shape of the R^j depicted in Figure 4 is typical. These curves reflect three probabilities: that a given job exists, that it will be found by a given method, and that it will be offered. As a rule that varies according to the type of job that is being sought, faculty salary data suggest that the distribution of jobs for which an individual might be considered is heavily skewed to the left, the result of many schools' attempt to set conditions as low as the traffic will bear.

The original skew is emphasized and accentuated by the distribution of found's and offered's. The poorer jobs are more likely to be found because they remain on the market longer. Good jobs are accepted quickly, but poor jobs must be offered to several individuals before one of them accepts. The poorer jobs are also more likely to be offered. Thus, the skew occurs.

With the above illustration in mind, a general statement of the theory of job search is now possible. At the outset, any individual faces a unique (to him) set of probability distributions (R_k^j's) of gains possible from job search, one distribution for each method. From these distributions, an expected value (G_k^{j}') may be computed for each method. The method that is pursued first is that which maximizes G_k^{j1} , where the "1" indicates the first round of job search. After the most promising method has been pursued, the value of using the remaining methods (one of which may be to pursue the first method again) must be assessed. Thus, new gains (G_k^j 's) are computed for each method. If any G_k^{j2} is positive, a second search method will be used, and so forth.

Choosing packages of methods. The process of job search is not accurately described by the try-one-method-and-wait-before-trying-another-approach. Because academic labor markets are open only during certain months of the year and because the good jobs are filled early, it is to the advantage of most job hunters to pursue several methods simultaneously, to start looking for jobs via a second method before the results of the first method are known. The candidate who waits until June to register with his college placement bureau because he feels that his informal contacts with undergraduate school professors will produce a good job may well be left without any desirable job options at all.

Only a small modification in the theory is needed to allow for "packages" of job search methods. Instead of viewing j as one method such as informing the department office at one's graduate school, j may be viewed as a package of methods and may include informing the department, individual graduate school professors, undergraduate professors, personal friends, and professional acquaintances. Any other package of methods might be similarly devised. In this new situation, the potential job searcher must compare the G^j's for the individual methods with the G^j's for package methods. Again, the method or combination of methods which yields the highest G^j will be chosen. Thus, Equation 4 is a useful, general statement of why different individuals search jobs by different methods and why the number of methods used varies. By estimating the benefits (B^j's) and the costs (C^j's) of various methods and method packages for different groups of professors, it should be possible to predict what methods, and how many, will be used by each group.

THE EXTENT OF JOB SEARCH........CHAPTER 15

Several identifiable groups stand to gain more than other groups from job search: some because potential benefits are so great and others because their costs are unusually low. In order to discuss fully the high benefit groups without involving the complications of cost differentials, let us assume that the costs of various methods of job search are the same for all groups of potential searchers. This simplifying assumption will be dropped later.

POOR BEFORE-SEARCH OPTIONS

One of the largest beneficiaries from job search is the group of persons who are currently situated poorly and who, without a search, will have a very unacceptable array of job options. Most graduate students fall into this category. When a student decides that the time has come to seek permanent employment, the prospect of having to remain at his graduate school because he cannot find an acceptable job is a very poor second alternative. The student wants a job and wants to avert having none offered. Unlike the professor whose present situation would be acceptable for another year if the "right" job did not turn up, the graduate student badly wants to terminate "the present situation." The returns from search are, therefore, high.

Figure 1 (see page 204) presents an extreme, though not unrealistic, contrast between the man with no job options such as the graduate students and the man with at least one acceptable before-search option. Assume that there are two individuals, X_1 and X_2, who are identically qualified and situated such that both men would find and be offered exactly the same jobs if they searched by any given same method j. That is: $R^j_{X_1} = R^j_{X_2}$. But assume that X_1, the graduate student, has no job options in hand (i.e., A^o_{max} for $X_1 = 0$), whereas X_2 is an instructor at a small school and has the option of continuing at his present $5,000 job (i.e., A^o_{max} for $X_2 = \$5,000$). All jobs found and offered represent an advancement to the student, but only those above $5,000 advance the man who was previously employed. Therefore, $G^j_{X_1} > G^j_{X_2}$. The shaded area in Figure 1 represents the portion of expected value which is relevant for the student but not for the instructor.

Of course, students are not the only group of graduate-trained personnel who have very unacceptable before-search job options. X_1 might as well have been the professor who is involuntarily terminated from his present job, whose alternative to search also unemployment (i.e., $A^{o}_{max} = 0$). Similarly, the men who are currently situated in jobs far below their capabilities and men who view their current jobs as unacceptable have a strong incentive to engage in extensive job hunts, for their before-search options (A^{o}_{max}) are very low, even if not zero.

The behavior of the professors in our survey conforms closely to theoretical expectations. To measure the extent of job search, the newly hired professors were asked: "How many different methods did you use to make your availability known?" and "How many days of productive time did you lose looking for and at jobs?" The assumption was made that the use of more days and more methods means more extensive job searches. That is, the professor who loses 10 days of productive time has made a more extensive search than the professor who loses only 5 days. And the professor who uses 10 methods has searched more extensively than the one who uses only 5. That an occasional professor using only one search method extensively (e.g., writing 1,000 letters of inquiry) makes a more thorough job search than a professor using several methods casually is undoubtedly true. Our measure is unreliable to this extent. Our measure is also rendered unreliable by the differing interpretations of the term, "productive days." Nevertheless, as rough measures of the extent of job search, the number-of-methods and number-of-days criteria seem appropriate. As a rule, people who use more methods and more days are generally those who search more extensively.

Using these measures, those persons with poor before-search options search much more extensively than those who have the option of remaining in a reasonably acceptable current position. Students, on the average, spend almost 10 days and use 3.7 methods, compared to 7 days and 3.3 methods for non-students. Whereas only 19.7% of the students do nothing to make their availability known, the comparable percentage among those with current jobs is 32.0%.

And, among the non-students, those who are established in the better jobs do the least about looking for another. Professors who cannot return to their jobs and those who have strong prejudices against wanting to return, conduct job searches that are much more extensive (by both measures) than the searches of the job switchers who are comfortably situated.[1]

INVISIBILITY

In academic labor markets, some supply is more visible to collegiate recruiters. For various reasons some persons will

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[1]

EXTENT OF JOB SEARCH:	DAYS LOST	NO. METHODS USED
Students	9.7	3.7
Non-students	7.2	3.3
Previous job unavailable	14.1	4.4
Previous job unacceptable	8.5	3.7
Previous job acceptable or desirable	5.4	2.8

always be considered for any vacancy which develops in their field, whereas others will virtually never be--not because they are not qualified but because their availability is not known. The "invisibles" stand to profit most from job search. Whereas the conspicuous professors are naturally given consideration, the "invisibles" must undertake the task of identifying the demanders and then making their availability known. Because fewer jobs will come to them on "their" own, the less visible candidates tend to have fewer before-search job options and, therefore, lower A^o_{max}'s.[2] As illustrated in Figure 2, the greater a man's visibility, the higher his A^o_{max} is likely to be and, therefore the lower his expected gain from job search.

Who are the "invisibles?" In large measure the invisibility of supply reflects the arduousness with which employers are forced to search. In sub-markets where few qualify for the vacancies, employers do the looking. In large markets, such as that for beginning English professors with specialties in American literature, the number of acceptable candidates viewable by any given school is likely to limit the candidates for serious

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[2] It is conceivable that a man might have fewer job options but that one of the fewer is better than the best one of many offers gathered by the visible man. For the "therefore" to apply, it is only necessary to assume that the offers received by both the visible and invisible candidate are randomly distributed.

Figure 1. Poor Job Option Versus Good Job Option

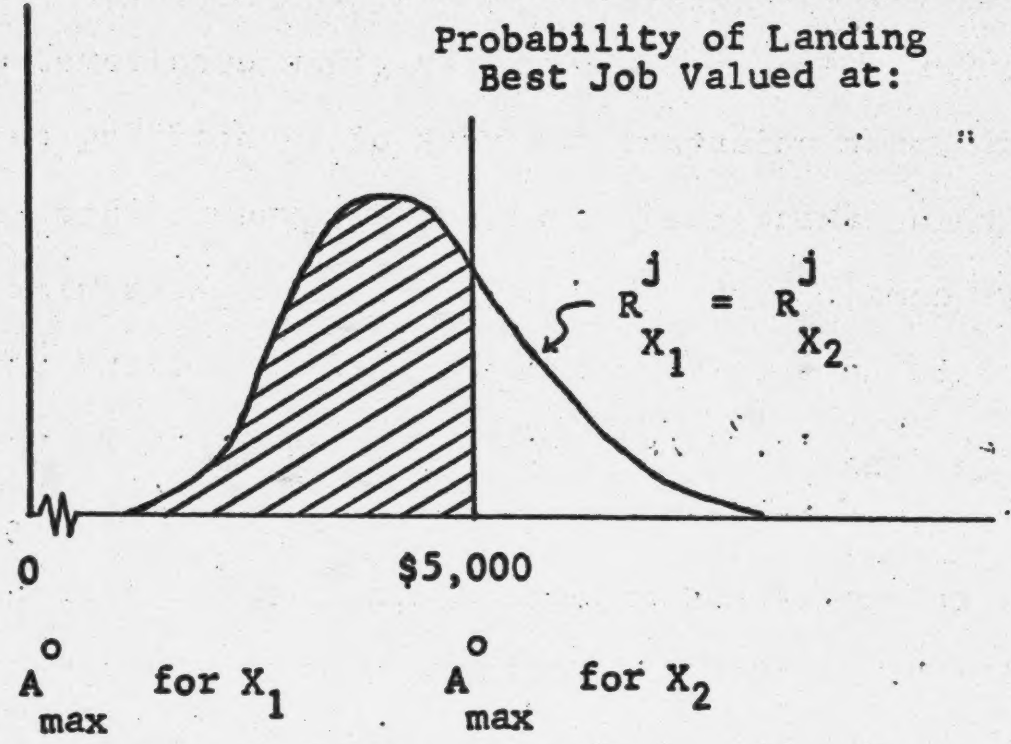
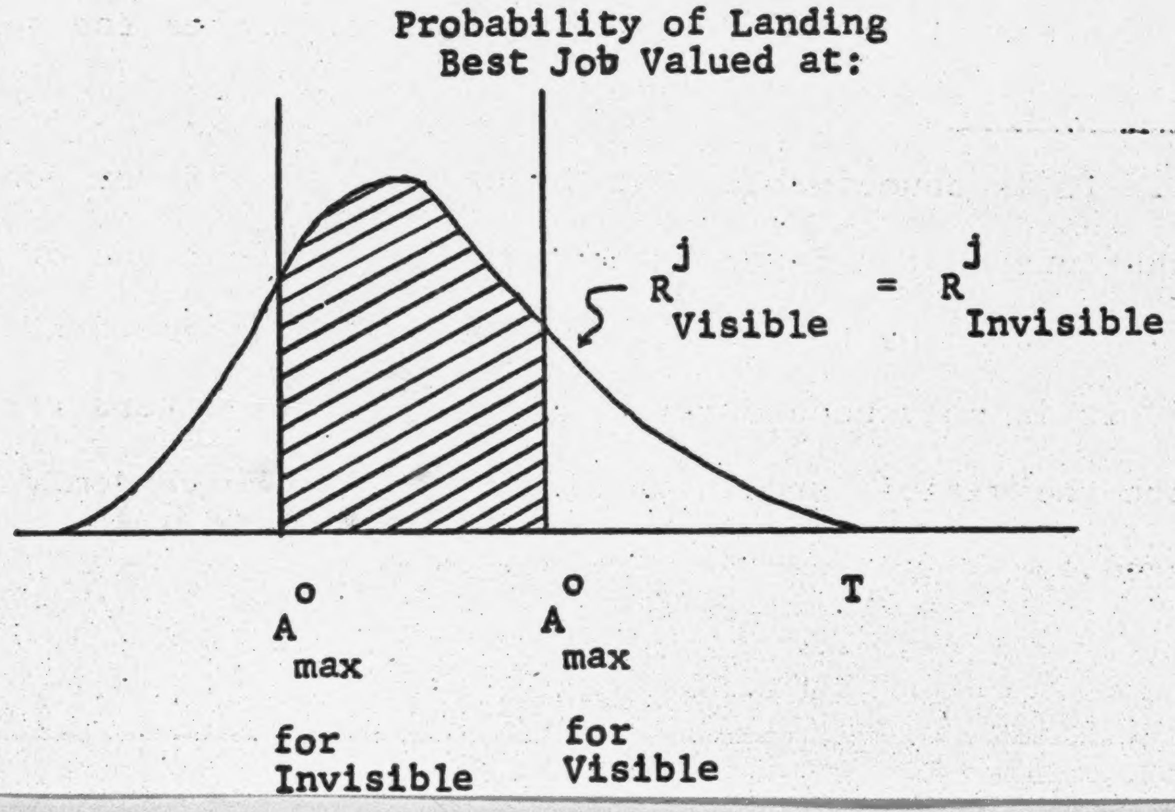

Probability of Landing
Best Job Valued at:
$R^j_{X_1} = R^j_{X_2}$
0
$5,000
A^o_{max} for X_1
A^o_{max} for X_2

Figure 2. Visible Candidate Versus Invisible Candidate


Probability of Landing
Best Job Valued at:
$R^j_{Visible} = R^j_{Invisible}$
A^o_{max} for Invisible
A^o_{max} for Visible
T

consideration on some principle such as first-come-first-serve. The school will consider the first twenty-five candidates and reason that the marginal improvement likely from the consideration of additional candidates cannot justify the effort involved. In the latter markets, it behooves an individual to take action which will cause him to be among the first twenty-five. Such action may well be job search. In contrast, in the very small markets for sub-specialists, where everyone knows everyone else and where all of the specialists in the country number less than twenty-five, the likelihood that a given man will be overlooked is considerably smaller and, thus, the returns to job search are also smaller.

Accordingly, the professors in the larger subject matter specialties tend to pursue more extensive job searches. The average number of days spent by professors in the 12 largest disciplines (9 days) is 3 days greater than in the other disciplines.[3]

Since most of the hiring is done at the beginning ranks, the markets for junior faculty are considerably larger than those for senior faculty. And, according to expectations, the persons seeking junior appointments expend more effort in their search whereas the senior professors allow the hirers to take the initiative. Aspirants to junior faculty posts spend 10 days of productive time in job search, compared to only 7 for senior faculty. Moreover, more search methods are used to pursue junior appointments, 25% more.

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[3] The size of disciplines is dichotomized according to COLFACS data.

All labor markets develop traditions, and the academic is no exception. Here there are traditional sources of labor supply: primarily the graduate schools and the non-tenured professors at the better schools. Persons located at these points are naturally conspicuous, but others are "invisible" and stand to gain greatly by making their availability known to the market. Whereas collegiate recruiters will go to the major graduate schools for names of likely employees, they will not make the rounds of the small, denominational schools in isolated locations. Realizing their disadvantage, faculty wishing to leave the less prestigious schools spend 1.2 more days and use 50.2% more search methods than their counterparts who seek to change from prestigious posts. And professors at small schools search more extensively than those leaving the larger ones, by using .5 more search methods and spending .8 more days of productive time.

As a rule, emerging students are more easily found by recruiters than are veteran faculty. Students are located principally at graduate schools which number less than 200, whereas veteran faculty may be at any one of over 1,000 four-year colleges. When seeking students, it is possible to contact one person at each school, or one person in each department at each school, to learn who is available. In contrast, the contacting of only one person in each department is not sufficient to survey the availability of veteran faculty--for no administrator will be willing to offer a list of his most moveable faculty, even if he can identify them. In short, students are more visible than experienced faculty.

Within the student group, those from the more prestigious schools are more visible than students from their less prestigious neighbors, for, as Caplow and McGee so vividly point out, the visibility of students is largely determined by the renown of their graduate school mentors. Because they are more visible, we would expect students to search less than faculty and, within the student group, students from better schools to search less than those from poorer schools. However, the opposite is true: the average days lost to job search for last year's students is 9.7, compared to 7.9 for last year's faculty. Also, the students from the better schools lost 9.1 days whereas the students emerging from the poorer schools lost only 2.9.

What evidently happens is that the students, especially the better students, are so visible that they are barraged by job offers. Each of the offers takes time to evaluate. The average student has 15% more concrete offers to consider than the average veteran college teacher. Students from the better schools consider 11% more offers than those from the poor ones. Moreover, students are often less ready to reach a decision about which job to accept, for they have not yet made up their minds about the type of career they wish to pursue, as a teacher primarily or as a researcher. In the case of good students, as many as 10 different on-campus interviews, each requiring a day or two, may be pursued before a decision is reached about which of the many alternatives to accept. Overall, the students in general probably are spending less time looking for jobs, but compensate by the additional time spent looking at jobs.[4]

Much like the students at the good schools, the professors in the excess demand disciplines tend to spend little time looking for jobs but are overcome by large numbers of offers searching them out so that they, in the end, spend slightly more time in job search than the professors in the excess supply disciplines. Although the professors with subject-matter specialties in the eight scarcest disciplines seek jobs by fewer methods, on the average they receive more offers and the entire process of looking for and at jobs takes about one day longer than for those in other disciplines.[5]

TYPES OF JOBS

Traditional practices in academic markets differentiate the profitability of job search for different types of individuals

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4. This hypothesis is strengthened by the observation that students from the better schools, as compared with those from poorer ones, pursue jobs by fewer methods.

5. The days of productive time lost in job search by persons in each discipline are listed below. As defined in Chapter 5,

in still another way. Some jobs are filled "by invitation only." Learning about these jobs, and subsequently making one's availability known to these employers, does not increase the chances of being considered. These jobs, primarily at the tenure level in the prestigious schools, are filled by employer initiative, they will not be sought for. The probability of finding and being offered one of these jobs through job search is virtually nil. Employer recruiting has, before any search by the individual, made the individual aware of the best job that will be offered to him. The individual's A^{o}_{max} is at the uppermost tail of his

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the disciplines are listed in order of excess demand.

DISCIPLINES	AVERAGE DAYS SPENT HUNTING:
1. Electrical Engineering	8.4
2. Education: Services: Administration	8.0
3. Mechanical Engineering	6.9
4. Mathematics	7.2
5. Physics	9.5
6. Economics	10.6
7. Civil Engineering	10.0
8. Chemistry	10.3
9. Counseling and Guidance	10.2
10. Clinical Psychology	11.6
11. Sociology	9.8
12. Art	10.7
13. Secondary Education	5.3
14. Political Science	10.4
15. Earth Science and Geology	9.6
16. General Biology	5.4
17. Biochemistry	10.7
18. Physical Education and Health	4.7
19. Music	6.2
20. General Zoology	9.1
21. English and Literature	9.5
22. History	10.9
23. French	8.2

R_k^j (or perhaps beyond), and nothing can be gained by job search,[6] as shown in Figure 3. The selectivity criteria are so restrictive that properly qualified candidates are not overlooked.

The very prestigious job described above is so rare that it would not warrant detailed consideration here, except for the fact that it represents an extreme of a general phenomenon, the irrelevancy of known availability. At the other end of the spectrum is the job opening that is available to any one who wants it and all a candidate needs to do is make his availability known. Market traditions evolve to place jobs toward the two ends of the spectrum. Where the ability and training requirements are less rigid and the terms less attractive, known availability tends to be a more important factor in who is offered the job. Thus, the underqualified candidate who emerges from a poor graduate school, seeks a non-tenured position, lacks the Ph.D. degree, and is willing to accept a low salary in an unrenowned school stands to gain more from job search, from making his availability known. In general, as a given person aspires toward the positions which resemble the tenured, prestigious university appointment, his benefit from job search diminishes.

FINDING BUT NOT LANDING

So far the expected gains of one particular individual (or two individuals with identical R^j's) have been discussed.

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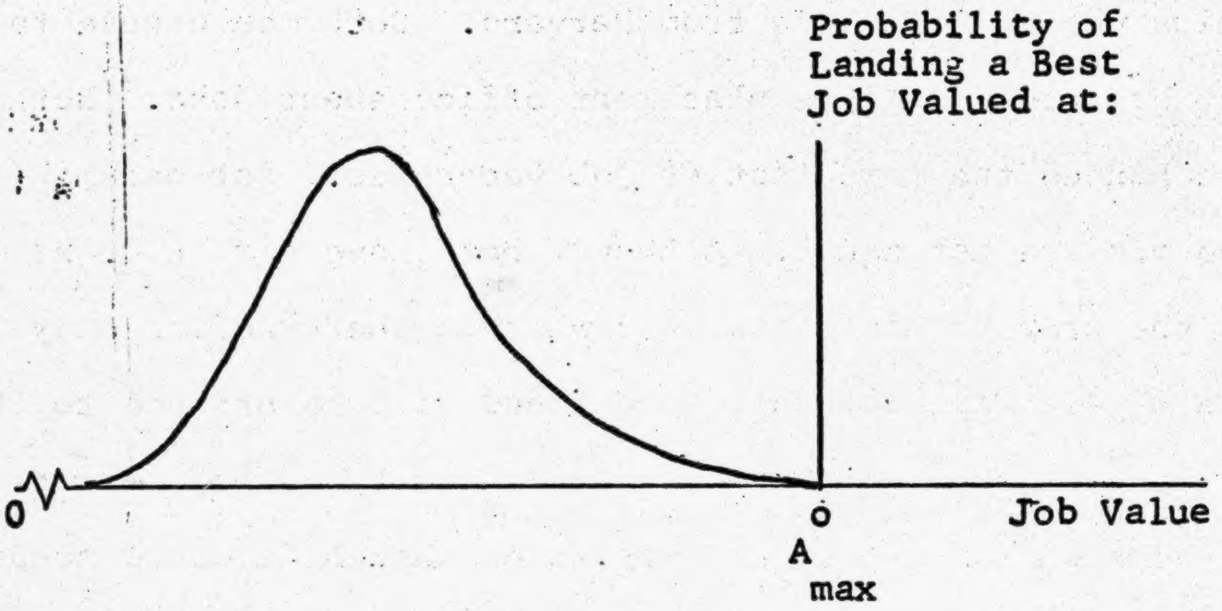
[6] The j in R_k^j here refers to a method which is the combination of all individual methods of job search.

Figure 3. For the Individual Seeking a Very High Prestige Appointment



In addition to variations in expected gains because individuals are differently situated before the search, there are other factors which differentiate benefits from a search. The better candidates and the poor candidates may well find the same jobs, but the better candidates will be offered them whereas the poor will not. To illustrate, envision two graduate students in economics with new Ph.D.'s from Harvard. Both men choose to contact Harvard's college placement office about jobs. Both men are handed the same list of job vacancies. But assume that the two men are not equal. Although both have new Ph.D.'s, one is the star of his class (X_3) whereas the other is only average (X_4). Virtually all jobs found will be offered to the star. But the average candidate will find that many of the better jobs will not come his way, even though he would accept them if they were to be offered. This may be shown in Figure 4 by tracing the individual' R-distributions (the probabilities that jobs of given values will be the best found and offered). From these it is readily apparent that the star will gain far more from job search than the average candidate. As a rule, if two candidates have equal before-search job options, the better of the two will gain more from job search.

VARIATIONS IN COSTS

The cost differentials among groups are smaller than the differences in benefits. The absolute dollar sums involved in job search are considerably less than the values of the jobs themselves. Also, the job search cost is incurred only once at the time of the search, whereas the benefits of the search are a stream of annual differentials discounted to the present period. Nevertheless, costs of undertaking a search of a given magnitude do differ among individuals and may, therefore, influence and explain the extent and nature of job search.

Costs must be subtracted from benefits to calculate gains. If, for example, a job is valued at \$7,000 and it costs \$200 to find it, then the job must be valued at \$6,800. The significance of cost, which is discussed in a previous section of this chapter and again in regard to Equation 4 above, can be illustrated diagramatically by the $\hat{R}^j_k$ and R^j_k distributions for a given individual. Refer to Figure 5. If method j were costless, then our individual's distribution of expected values would be $\hat{R}^j_k$. But, if method j costs \$200, the proper distribution is R^j_k, which is the $\hat{R}^j_k$ distribution shifted \$200 to the left.

The relevant question is, "for what groups is there likely to be a large difference between the $\hat{R}^j$ and R^j distributions?" Alternately, "what groups will incur the largest costs in job search?"

One determining factor is the importance of time lost in searching for a job and the ability of a man to get away. Graduate-trained personnel who are emerging from their stint with the military, for example, have little opportunity to escape their present duties in order to pursue jobs, especially if they are stationed overseas. Though less pronounced, the same difficulties of finding time to locate alternative employment are more restrictive to persons outside academia than within.

Figure 4. Good Candidate Versus Poor Candidate

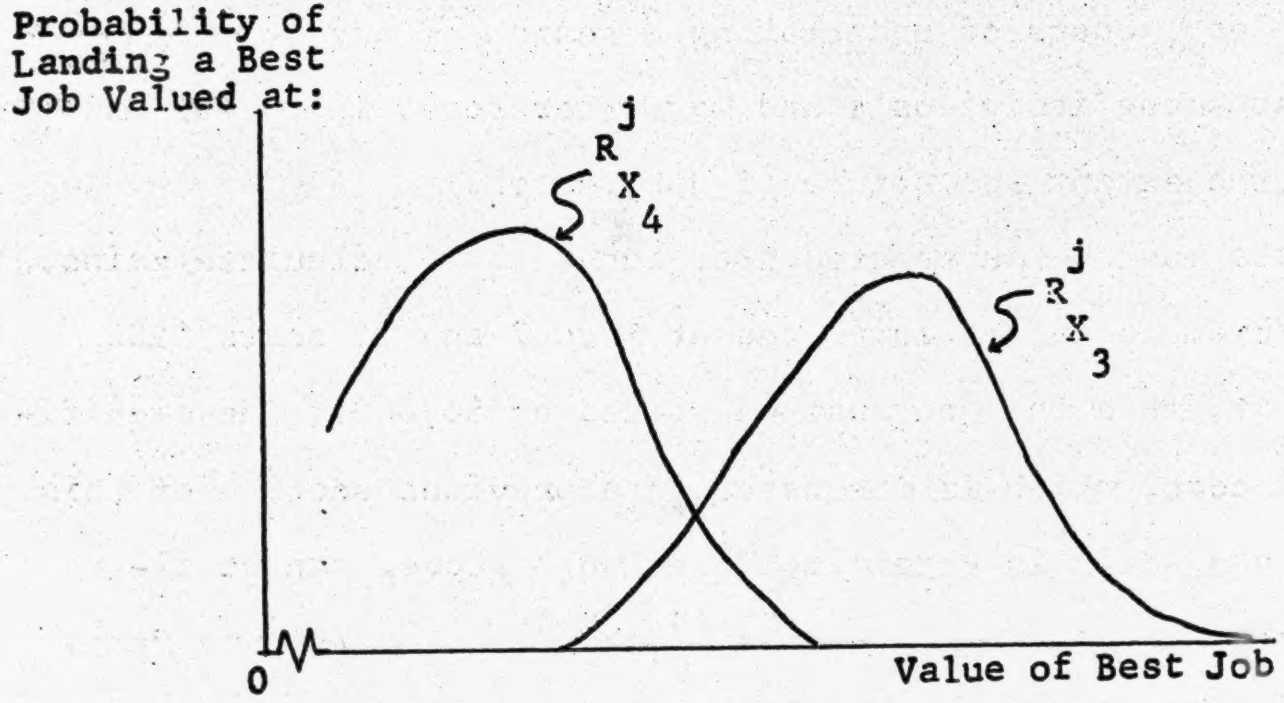
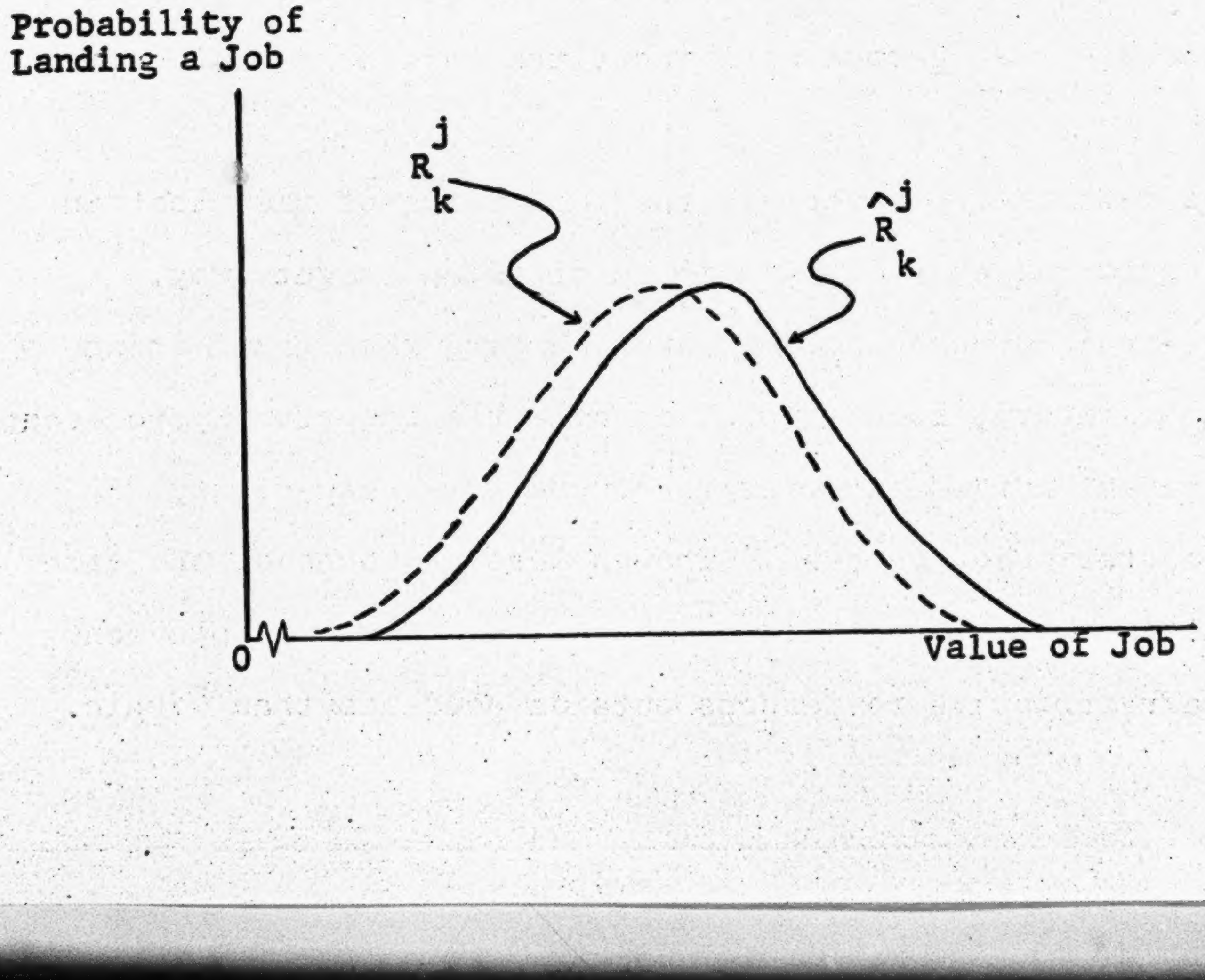


Figure 5. The Importance of Cost



For both students and veteran professors have relatively flexible schedules which allow them to give, if they desire, several days of their productive time to job search. Results from our survey lend support to our hypotheses. Whereas last year's students and faculty lost an average of almost nine productive days, those moving into college teaching from non-academic jobs spend only four and a half days. It was not that last year's non-academicians did not want to search, for those that did search used more search methods than either group coming from within the academic community, but that the costs of finding time away from their regular work were simply too high.

The non-academicians are not the only ones for whom the costs of search are so high. Some individuals must count as cost the danger that their present employers will react negatively to the knowledge that one of his employees is searching for another job, that retaliatory measures such as firing may be taken. Fortunately, the incidence of this appearsto be relatively rare in academic circles, but its existence cannot be denied. The man who, before he undertakes a search, knows that he will not continue in his current job, either because he has no current job or because his current job is totally unacceptable to him as an alternative for next year, has nothing to fear from the loss of this "opportunity" and may therefore be more likely to undertake a job search. As for persons in jobs where they would like to continue if no startling alternative is located, professors at the larger public schools seem less in danger of being discriminated against than those in the smaller private schools, both because of the anonymity offered by largeness and by the general attitudes of administrations.

As they influence benefits, the market traditions and social milieu also differentiate costs. Job search is acceptable in some circles but not in others. Neophytes, especially emerging graduate students, are expected and accepted in markets whereas tenured professors are viewed suspiciously and looked down upon by their colleagues when they venture to make their availability known publicly. Yet, when a professor reaches the emeriti category, job search is again acceptable among his scholarly peers.

Because of the milieu that surrounds them, students emerging from the less prestigious graduate schools and professors leaving jobs that are outside the mainstream of The Academic Establishment are bound to suffer less approbation from an extensive and concerted job search. The sarcastic comments received by the man overtly seeking new employment who runs in the Establishment circles are likely to be far more numerous than those received by the man who is currently employed in business and in other types of academic institutions where the rule is "search" rather than "the reluctant maiden tradition." In fact, we might well expect to find that job search activity is greater in the disciplines where the opportunities outside academia tend to be proportionally more numerous, for the social milieu in these disciplines may be influenced more by government and industry than by the academic world.

SUMMARY

In general, the information on the extent of job search confirms the relevance of the theory of job search developed in the previous chapter. With the exception of certain groups of professors who are inundated by offers too numerous to evaluate in a small amount of time, the more extensive searches are pursued by the professors who have the most to gain--the ones with poor before-search options, the invisibles, the ones desiring the types of jobs that must be sought--and the least to lose.

The extent of job search is not, however, solely dependent upon these variables. Another factor is the availability of acceptable methods of search. In the next two chapters we shall discuss the search methods that are most appropriate for various types of job seekers. Since, as we shall learn in the next chapter, the search process seems to be an ordered one--from informal to formal--the extent of the search is highly dependent upon the appropriateness of using formal methods.

THE
JOB
HUNT.........CHAPTER 16

Any market which has many buyers and sellers has the inherent problem of communication. To solve the problem, liaisons have emerged in all markets with each market having its peculiar type. The academic market is no exception.

The role and structure of these intermediaries have evolved in response to social changes which have vastly increased the informational needs of institutions and individuals. Today, market liaisons collect information about jobs and candidates available and disseminate it to the opposite side, thus connecting employers and candidates. Liaisons counsel employees about what to expect in finding jobs, where to look for jobs, and how to improve their chances of getting good jobs. They also counsel employers about a candidate's qualifications, background, and character and are instrumental in the hiring process.

From a social perspective, intermediaries make the market more competitive and more efficient. They tend to match the better candidates with the better jobs. Candidates may be ignorant about what to look for in jobs and how to evaluate them. But, the counselors, alert to the real differences in jobs, will advise the candidates and reduce the number of instances where a candidate accepts job A rather than job B because he is ignorant that job B is better. Similarly, counselors can reduce the number of bad judgments by employers.

In short, liaisons disseminate market information to prospective employers and employees. This chapter gives a general picture of the types of liaisons used in the academic market, the types of persons using them, and the types of information found. Chapter 17 gives a more specific description of particular liaisons and their unique role in the market.

LIAISON TYPES

The market intermediary or method by which an individual searches for job information may take many forms. It can range from highly structured to unconscious, from fee-changing employment agencies to an offhand convention remark about a colleague whose position is becoming vacant because he has received an extremely attractive job offer.

In general, the range of choices open to an individual may be dichotomized into "formal" methods of search and "informal" ones, depending upon the primary relationship between the individual and the liaison. "Informal" refers to all those liaisons for which a given individual feels some identification and with which the individual has relationships which are not or have not always been primarily for the purpose of finding a job. For example, a student who finds a job through his graduate school office or graduate school professor uses an informal method. His primary relationship with the school is for the purpose of getting an education, not a job.

"Formal" refers to all liaisons with which the individual initiates contact for the explicit purpose of finding a job. The individual has no other relationship with the liaison except as a candidate who is looking for a job and expects the relationship to terminate once a job is found. Advertising in a professional journal and consulting the U. S. Employment Service are formal methods of searching for a job.[1]

Although intermediaries are either formal or informal, the numerous forms which they may take allow the individual approaching the market a wide range of choice as to how he will proceed. The least ambitious and most confident will do nothing to seek liaisons and depend upon the direct knowledge of prospective employers and the goodwill and intuition of liaisons to locate jobs for them. Others will proceed informally by notifying friends, colleagues, and graduate school contemporaries of their interest in locating a new job. Still others will proceed formally by active letter writing campaigns, answering job available ads, and consulting professional placement services.

The difficulty of making good decisions puts a premium on the type of information gained through the informal mechanism.

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[1] Obviously the primary relationship criterion of distinguishing between formal and informal methods of job search is not perfect. For example, an individual might find a job through a commercial teachers' agency because he is a long standing personal friend of the agency manager. His primary relationship to the agency is not for the purpose of getting a job, but we are forced to consider this and similar cases as formal methods of search, under the assumption that such cases are not significantly large.

However, the rapid expansion of the academic market since W. W. II has much overburdened the channels of informal communication (e.g., graduate school professors and friends). As a result, formal liaisons have greatly multiplied in response to the new need for market information channels. Nevertheless, formal intermediaries are not in positionsto know the kind of information available to informal liaisons--for example, professional competence and personality. Often the formal liaisons are merely means for employers and employees to establish those kinds of informal acquaintances which have traditionally been the important sources of market information. The formal and informal markets are not competitive but complementary. Frequently the formal system provides a "lead in" to the informal.

As we shall see, the particular market strategy chosen depends heavily upon the types of jobs sought, the accessibility to formal techniques, and the respectability of the method within the individual's peer group.

SEARCH STRATEGY

Like most markets,[2] the academic market is dominated by informal contacts: 65% of the newly hired teachers find their jobs through informal methods. This prevalence of informal contacts in finding jobs is not surprising when earlier studies are considered. Hardin Craig affirmed the importance of informality in the hiring process in 1929 in a study of appointments and promotions in American colleges and universities. His conclusion is from the response of 117 institutions regarding the sources of their faculty supply. "It may be said then that the first four headings, which rest to a certain extent on acquaintanceship, at first-hand or second-hand, accounted for 556, or 73% of the total number of reported cases. This is so general a policy as to make remarks almost unnecessary. The usual way of filling vacancies in college and university faculties is to recommend a competent person if you know one; or, if you do not, to write to somebody in another institution in whose judgment you have confidence to see if he or she knows anybody who will do."[3]

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[2] We could predict that informality would be characteristic of hiring in the academic labor market because it is also characteristic of methods used by employers and employees in other markets. See the following studies: Dorothea De Schweinitz, How Workers Find Jobs: A Study of Four Thousand Hosiery Workers in Philadelphia (Philadelphia: University of Pennsylvania Press, 1932), p. 89; Seymour Martin Lipset, et al, "Job Plans and Entry into the Labor Market," Social Forces. Vol. 33, No. 3 (March, 1955), pp. 224-232; Theodore F. Malm, "Recruiting Patterns and the Functioning of Labor Markets," Industrial and Labor Relations Review, Vol. 7 (July, 1954), pp. 507-525; William H. Miernyk, Inter-Industry Labor Mobility: The Case of the Displaced Textile Worker (Boston: Bureau of Business and Economic Research, Northeastern University, 1955), p. 22; Charles A. Myers, "Labor Mobility in Two Communities," Labor Mobility and Economic Opportunity (New York: John Wiley and Sons, 1954), pp. 68-79; Charles A. Myers and W. Rupert Maclaurin, The Movement of Factory Workers (New York: John Wiley and Sons, 1943), p. 47; Lloyd G. Reynolds and Joseph Shister, Job Horizons (New York: Harper and Bros., 1949).

Similarly, a paper by A. B. Hollingshead in 1938 substantiated the influence of informal liaisons in a particular institution. His paper covered the appointment of new staff in Indiana University between 1885 and 1937. He measured the influence of membership in three ingroups (alumni, friendship, and family) on selection and found that 43% of all appointees had been alumni, and 20% had been members of families connected with the staff. Although he could not statistically measure the influence of friendship, he concludes that "we are convinced that these three factors account for at least four-fifths of all appointments, and that only a small minority may be attributed to professional competition; i.e. the selection has been largely social rather than competitive."[4]

In a 1942 study Logan Wilson reported that "although the candidate with a high record and unqualified recommendations from competent judges stands a better chance than the less meritorious, between eligible individuals of apparently equal ability and training, preferment is always shown for 'connections.'"[5]

THE PATTERN OF MARKET SEARCH

The characteristic way in which jobs are sought and found in the academic market stresses informality. Virtually everyone uses personal contacts of one sort or another, but some people are less successful in landing jobs through the informal market. Either they do not have the right contacts or the jobs they locate informally are not offered to them. Still other people cannot find jobs informally. The drastic consequences of not getting a job forces these individuals into a more extensive search. As a result, they resort to using formal methods.

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[3] Hardin Craig, "Methods of Appointment and Promotion in American Colleges and Universities," Bulletin of the American Association of University Professors, vol. 15 (March, 1929), p. 179.

[4] A. B. Hollingshead, "Ingroup Membership & Academic Selection," American Sociological Review, vol. 3, 1938, p. 831.

[5] Logan Wilson. The Academic Man: A Study in the Sociology of a Profession (New York: Oxford University Press, 1942), p. 51.

The typical pattern of search is that professors approach the market in gradual stages. First, they tinker with the idea of switching jobs subtly and inconspiciously, while at the same time gathering bits of information about potential employers. Second, they actively pursue informal liaisons, publicizing their availability among friends and colleagues and looking for open jobs. Finally, those who do not locate new positions through personal contacts must resort to the more impersonal intermediaries. As shown by Table 1, out of the jobs found informally, 36% were bound by a commitment prior to April 1964, whereas of the jobs found formally only 29% were bound by commitments made prior to April 1964. This suggests that informal methods tend to be used earlier than formal methods.

Table 1. Date of Final Commitment to Job

METHOD OF FINDING JOB	BEFORE APRIL	APRIL-SEPT.
Informal	36%	64%
Formal	29%	71%

Source: Survey data.

USE OF FORMAL METHODS

Since virtually everyone uses informal intermediaries to get jobs, it will be instructive to know what types of people use the less popular formal methods. Chapter 14 theorizes that the ones most likely to use formal methods are those who benefit the most from an extensive job search. In other words, some people are more prone to use formal methods simply because they use more methods. Those people who use fewer methods do not get around to the formal methods.

We would expect, therefore, that the users of formal methods are those whose expected benefits from an extended job search are greater than their expected costs. These are those for whom the total benefits of the job to be found are greater than the costs of search plus the benefits of the best available alternative before the search. Table 2 shows that our expectations are well founded and that reality is consistent with the theory.

Table 2. Importance of Formal Methods

INDIVIDUAL CHARACTERISTICS	PERCENTAGE OF ALL METHODS USED IN JOB SEARCH WHICH ARE FORMAL*
Involuntary movers	15% (1.49)
Voluntary movers	18% (1.74)
Very unacceptable previous job	47% (2.03)^{s}
Satisfactory or desirable previous job	38% (1.14)
Students last year	41% (1.50)^{s}
Faculty last year	25% (0.40)
Students from bottom 40% schools (invisible)****	46% (1.69)^{s}
Students from top 20% schools (visible)	41% (1.30)
Non-publishers (invisible)***	45% (1.44)^{s}
Big publishers	37% (1.36)
Outside academia last year (invisible)	42% (1.09)
In college teaching last year (visible)	41% (1.30)
Previous job at bottom 20% schools****	41% (1.21)
Previous job at top 20% schools	38% (1.26)
Excess supply disciplines**	46% (1.49)^{s}
Excess demand disciplines	26% (0.70)

Source: Survey data.

*/Figures in parentheses refer to the average number of formal methods used per person. Formal methods include: college

placement office, convention placement service, public employment service, journal want ads, church related and commercial placement agencies, and professional association services. Informal methods include contacting a former professor, a colleague or professional acquaintance, a publisher's representative.

**/Disciplines are graded according to the Shortage Index explained in the appendix.

***/Big publishers are those who have written a book or 10 or more articles.

****/Institutions are rated according to the quality index explained in the appendix.

s/means that the difference in paired percentages is significant by chi-square at .05 interval of confidence.

Prospective college teachers who would suffer most from not finding a good new job--students who would have no job, voluntary movers who regard their present jobs as very unacceptable--use more formal methods, as indicated by the averages in the parentheses and use a greater percentage of formal methods. Similarly, obscurely located job seekers--students emerging from the poorer schools, faculty leaving the poorer schools--tend to stress the more formal market strategy.[6] And the more conspicuous big publishers employ fewer formal methods than the nonpublishers.

USE OF INFORMAL METHODS

Informal methods predominate in the market not only because they are traditional. There are a number of reasons why the tradition still persists in spite of the great need for a centralized clearinghouse of market information.

First of all, high status[7] academicians, who tend to be opinion setters for the entire academic community, look down upon the formal methods as unpromising and unprofessional. Attitudes are summed up by the answers to a question concerning why particular types of formal intermediaries were not consulted in the newly hired professors' most recent moves. Of all of the persons moving between jobs, newly hired teachers who were in higher education last year, 34% said they did not consult the public employment agency because it would have been "unprofessional" and "beneath the dignity of a college professor"

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[6] 6. A surprising and unexplainable finding is that last year's faculty tended to use a greater number of formal methods than persons who entered teaching from outside academia. A possible explanation of this phenomenon is put forward in Chapter 13.

[7] 7. High status refers to professors with enviable characteristics, such as publications, the doctorate, experience at high quality schools.

Table 3. Attitude Toward Formal Methods*

STATUS CHARACTERISTIC**	PERCENTAGE LABELLING THE LEAST RESPECTED FORMAL METHOD AS "UNPROFESSIONAL" OR "WORTHLESS"
In Higher Education Last Year	34%^{s}
In Primary or Secondary Education Last Year	21%
Many Publications	17%^{s}
No Publications	6%
Doctorate Holders	72%^{s}
Non-Doctorate Holders	26%
Top 20% of Faculty***	40%^{s}
Bottom 20% of Faculty	21%
Top 20% of Students***	38%^{s}
Bottom 40% of Students	21%

Source: Survey data.

*/The percentage cited is for the formal method which the greatest number of persons within the matched groupings designated as "not used" because it was either "unprofessional and beneath the dignity of a college professor" or because "good jobs are rarely found by that method and it takes more time than it is worth."

**/The first group in each pair is of higher status.

***/Institutions are rated according to the quality index explained in the appendix. The "of students" category means that a man's highest degree is held from an institution which ranks within the top 20% of faculty.

s/ means that difference is significant by chi-square at .05.

or because "good jobs are rarely found by this method" and "it takes more time than it is worth." This 34% figure appears in Table 3 because the public employment service method of finding jobs was rated as "unprofessional" or "worthless" more frequently than any other formal technique.

The data presented in Table 3 show that, in almost all cases, the higher status professors more often view with distain the formal placement methods: the doctorates (72%) more than the non-doctorates (26%), faculty in the top schools (40%) more than those in the bottom group (21%), big publishers more than persons without any publications to their name, students from the top schools more than students from the poorer schools, and persons in higher education more than those coming from lower level education institutions. This unfavorable attitude toward the use of formal methods discourages those in the same groups and in lower status groups from using the formal channels. People tend to conform to the expected behavior patterns in their own groups and in the higher status groups toward which they are striving.

Applied to economics, these sociological phenomena make the use of formal methods too costly in terms of the loss of status. Thus, non-economic considerations cause candidates, especially high status ones, not to use formal methods even though they may engage in an extensive market search.

The complex process of recruitment-placement is made more complicated yet by deeply imbedded professional attitudes against overt job-seeking, and a confused and inconsistent recruiting rationale. In any of the professions, to be openly available or seeking a job--even another or better job--can be very damaging to professional prestige. The reasoning runs (1) If A is tops or good, A will be remembered and asked to do bigger and better things; (2) But if A is known to be "looking around," he has not been asked, and something must be wrong with him, either professionally or personally; (3) Therefore, A should not be asked to do bigger and better--or even other--things, if there are alternative candidates that can be sought out and coaxed to leave perfectly satisfactory jobs. Hence an elaborate but unreliable set of private grapevines, extending from buddy-to-buddy, or patron-to-protege have been developed to discreetly carry intimations of availability to collegiate recruiters, whose stated purpose it is to identify and hire only those who appear satisfied with their current situations.

The use of formal methods is not only discouraged by attitudes in the market, but also because they do not turn up the best jobs. That the jobs of higher rank, salary and prestige as well as lower teaching load and greater specialization are usually found informally is shown in Table 4 where the answers to the question, "By what means did you locate your present job?," are categorized according to selected job characteristics. In every instance, the more desirable the job, the greater the likelihood is that the job will be found by informal methods.

Table 4. Method of Finding Current Job, by Selected Job Characteristics

MEASURE OF CURRENT JOB QUALITY	PERCENTAGE FINDING JOB INFORMALLY*
PRESTIGE OF SCHOOL:	
Top 20% of Faculty	80%[s]
Middle 20% of Faculty	69%
Bottom 20% of Faculty	56%
RANK OF APPOINTMENT:	
Full Professor	77%[s]
Associate Professor	69%
Assistant Professor	64%
Instructor	61%
TEACHING LOAD:	
7 Hours or Less	78%[s]
8-10 Hours	67%
11-16 Hours	58%
17 Hours or More	56%
SALARY:**	
$9,500 and Above	79%[s]
$8,000-$9,000	67%
$7,000-$7,900	56%
Below $7,000	57%
TEACHING ASSIGNMENT:	
Only One Field	65%
Several Fields	61%

Source: Survey data and Quality Index.

*/The percentage cited subtracted from 100% give the percentage of jobs found formally.

**/Salary data are for emerging students only.

s/means that differences in the percentages are significant by chi-square at .05.

A difference in yield by method used is reported by John Stecklein and Robert Lathrop. Studying the method of first learning about jobs at the University of Minnesota, both the high prestige Minneapolis campus and the low prestige Duluth campus, they found that nearly 33% of the appointees at Duluth located their jobs through a formal agency, whereas less than 5% of the appointees at the Twin Cities campus found their jobs in this manner.[8]

One explanation for the better yield of informal methods is that the best jobs are simply not advertised in the formal markets. According to economic theory, a firm hires "openly." That is, when a position needs to be filled, the would-be employer widely circulates information on this position, accumulates a list of acceptable candidates, and then goes about contacting these candidates. In practice, Caplow and McGee argue that most of the hiring is "closed." Positions are not formally advertised. Nepotistic or informal themes occur throughout the market. For example--"he had help from his home institution," "he knew the man who left," "he knew someone here," "someone from there was here," "someone from here was there," "he was on the scene," "he'd been here before."[9]

Logan Wilson reports that this is a characteristic peculiar to the American market. "Unlike many English universities, American institutions do not publicly advertise vacancies, nor does the aspirant secure placement in the same way that he does a civil service job. He may register with a teachers' agency and have it act as intermediary in informing him of vacancies, yet about all the agency can do to further his cause is to supply information (for which he pays a percentage of his first year's salary), and vacancies brought to his attention by commercial agencies are more likely than not to be rather undesirable posts in teachers' colleges or obscure private institutions."[10]

By not advertising the top jobs, the better schools avoid an avalanche of underqualified candidates. Likewise the better schools are not forced to use formal liaisons because they have adequate informal contacts; the poor schools do not. Finally, the more important, more crucial jobs are filled by the most

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8. John E. Stecklein and Robert L. Lathrop. Faculty Attraction and Retention: Factors Affecting Faculty Mobility at the University of Minnesota (Minneapolis, Minn.: Bureau of Institutional Research, University of Minnesota, 1960), p. 15.

9. Theodore Caplow and Reece J. McGee., The Academic Marketplace (New York: Basic Books, Inc., 1958),pp. 109-110.

10. Logan Wilson, The Academic Man (N. Y.: Oxford University Press, 1942), p. 50.

trusted methods, i.e. informal. The formal liaisons do not provide enough information to allow discrimination between candidates for the top jobs.

Since informal methods yield superior jobs, we may say that candidates select the method to use according to the type of job sought. The better qualified students and teachers tend to seek jobs which are acceptable to them via informal methods. The poorly qualified tend to use formal methods. Also those who are concerned about the tangible aspects of a job tend to use formal methods.[11]

SUMMARY

Intermediaries exist in every market to serve the informational needs of employers and employees. In the academic market there are a myriad of liaisons which allows the potential college teacher a wide range of choice in methods to search for jobs. Generally, a liaison may be differentiated according to the individual's primary relationship to it. Thus a liaison may be either formal or informal

The pattern of job search in the academic market stresses informality. Every potential candidate uses informal methods of search; the typical candidate not only uses informal methods first, but he also searches for his job via more informal than formal methods, and he usually finds his job through informal contacts. These are not surprising characteristics of the academic market because similar conclusions have been advanced by earlier writers, and these same characteristics predominate in other labor markets.

In spite of the central tendency toward a common behavior pattern, a differentiation does exist between the users of formal and informal methods. The invisible, the poorly qualified, and the currently non-teaching candidate--in short those who stand to gain the most from an extensive market search--use formal methods simply because they use more methods. The well qualified, highly demanded individuals use fewer methods. Often they disapprove of using formal liaisons. Finally, there are some individuals who would benefit from an extensive search and the use of formal methods, but who do not use formal intermediaries because of non-economic considerations.

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11. Thirty-eight percent who emphasized tangible aspects used formal methods compared to 28% who emphasized intangible.

THE ROLE

OF LIAISONS.........CHAPTER 17

By extending the cost-benefit theory of job search beyond a simple dichotomization between informal and formal methods, in this chapter we will attempt to explain the special role of every different type of intermediary, to identify the special submarkets served by them and also to identify the idiosyncracies of the liaisons. Although the cost-benefit analysis underlies almost all of what is said and the comments in this chapter are inextricably related to the theory presented in Chapter 14, the relevance of the theory is only stated explicitly when the relationship is obscure and not likely to be noted since most of the relationships are simple and obvious.

The same principles apply in the selection of a particular technique as in the determination of the extent of a search or of a general approach to the market: the less visible and less able candidates and institutions must exert the most effort. For an individual, the choice of search techniques varies according to the extent of his professional contacts, the scarcity of his services as dictated by the genus and quality of his training, and his comparative accessibility to various techniques. Similarly, employers' search strategies vary according to exposure, bargaining position, ability to attract, and access to various sources of supply.

THE INFORMAL METHODS

From the extremes of "doing nothing" to "registering with the department office at my graduate school," there is a spectrum of techniques of job search which become increasingly institutional. All of them are "informal." Yet, they vary greatly in their respectability, use, and effectiveness, as well as in the persons who use them.

Informal job search methods are elusive. Exactly where "legitimate" professional activity and sociability stop and the deployment of informal techniques of job seeking begins can rarely be determined with precision. Even more difficult is the separating of one technique from another, for liaisons may be known in many different ways. For example, the same man may serve as an undergraduate professor, a friend, a major professor, and a former colleague. In a broadly based study of this scope, it would have been impossible to develop the detailed information necessary to untangle the nature and extent of subtle interpersonal relationships. Instead, we simply asked, as a reasonably accurate approximation of behavior, individuals first how they sought a new job; second, how they actually found concrete alternatives; and third, how they found the particular job that they accepted.

Table 1 presents a summary of the responses to these three questions. It is an excellent summary of the role played by each intermediary in the market and is referred to often in the text of this chapter. The first line of the table shows that 40% of all newly hired professors consult one or more of their graduate school professors about job opportunities, that their graduate professors know about 1.4 jobs on the average, and that 12% of the new faculty actually accept one of the jobs mentioned by a graduate professor.

The fountainheads of the informal placement networks are the professors at the major graduate schools who train a large portion of the new college teachers. They are widely known in their fields, and inquiries about persons who might fill vacancies in their areas naturally gravitate toward them. Especially for emerging students, these teachers are a valuable source of leads. Through personal correspondence, in corridor conversation at professional gatherings, from a general "feel" for the market--graduate school mentors learn where the vacancies are and refer their proteges to them. With personal friends and professional acquaintances at other institutions, many of whom are their ex-students, they establish contacts for the newly trained professors.

In the larger departments where many new teachers are trained annually, more organized efforts of department-wide placement are often established. Extending beyond the efforts of the candidate's major professor, department offices mobilize their entire faculty to scout vacancies and to advertise available candidates. The history department at the University of Wisconsin, for example, asks its staff to carry to conventions vitae on its graduate students who are available for hire and to distribute the vitae among likely employers. When a staff member learns of a job vacancy he is expected to inform a departmental placement coordinator who is responsible for consolidating all such information into a weekly statement of available positions.

Table 1. Role of Market Liaisons

TYPE OF LIAISON	METHOD OF SEARCH (% of all candidates)	MEAN NO. OF JOBS FOUND (per candidate)	METHOD OF FINDING CURRENT JOB (% of all candidates)
INFORMAL:			
Graduate Professor	40%	1.41	12%
Graduate Department Office	32	1.72	6
Undergraduate Professor	16	0.82	3
Graduate School Classmate	17	0.61	3
Faculty Colleague	20	1.07	7
Other Professional Friend	25	1.01	8
Publisher's Representative	2	0.86	**
Did Nothing & Was Recruited	29	1.82	26
Total	*	*	65%
FORMAL:			
Blind Letters	46%	2.14	19%
College Placement Office	36	2.75	6
Church Related Placement Service	5	1.30	1
Professional Association***	14	1.96	2
Ad: "Candidate Available"	3	2.56	**
Ad: "Position Available"	9	1.73	2
Convention Placement Service	14	2.42	2
Public Employment Service***	3	1.65	**
Commercial Teacher's Agency	7	3.05	3
Total	*	*	35%

Source: Survey data.

*/Totals are not meaningful, for one person could pursue jobs by several methods.

**/Less than 0.5%.

***/Excluding convention placement service and advertisements in professional journals.

Although this particular effort is far more extensive than average, many graduate school departments do assume some organizational responsibility for job finding, particularly in the excess supply fields where good jobs are hardest to find. As Logan Wilson points out, it is in the interests of the neophyte's mentor and of the department to see that graduates are well placed, for their own reputation will stand or fall depending upon that of the men they educate.[1]

Forty percent of all new faculty consult their graduate mentors and 32% register their availability with the departmental office. Together graduate school sources yield, on the average, over three concrete job opportunities. Eighteen percent of newly hired faculty accept one of them.

Graduate school professors are especially helpful to the man who is seeking an appointment at a top-level school, or at a school that is within the "orbit of influence" of his graduate school. Nearly one-fourth of all jobs at the top 10% schools are found through these professors. Graduate school professors are less helpful to the marginally qualified, both because they do not maintain contacts at the types of schools that would hire them and because they do not have as much self interest in the placement. Sensing this, only 37% of the master's degree candidates seek help from their graduate school professor and graduate school office, compared to 46% of the holders of doctorates.

Regardless of their qualifications, candidates interested in non-university teaching often seek help from a formal placement agency or register their availability with professors who are more familiar with opportunities outside the charmed circle of graduate schools. Often a man's undergraduate teachers provide contacts here. Almost one-sixth of all professors alert their undergraduate professors to their availability and, of these, a disproportionately large percentage wish to teach in an IHE virtually identical to their baccalaureate alma mater in level, control, quality, region, and size.[2]

After a man leaves school he loses touch with his professors and his graduate school. As time passes, contacts are lost through death and geographic separation, and candidates are decreasingly likely to rely upon their former teachers for job leads. Table 2 summarizes the percentage use of former teachers. Two-thirds of the younger job seekers consult former teachers, compared to only one-third of those over 35. After the first five years out of school the use of former teachers diminishes rapidly.

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[1] Logan Wilson, The Academic Man (N. Y.: Oxford Univ. Press, 1962), p. 49.

[2] The group of professors whose "dream" IHE is a mirror image of their baccalaureate alma maters consult an undergraduate professor much more often than the average professor, the difference being significant by chi-square at .01 interval of confidence.

Table 2. Use of Former Teachers

MEASURE OF SEPARATION	PERCENTAGE CONSULTING
AGE:	
35 and Under	69%
Over 35	31
YEARS SINCE LAST DEGREE:	
None	72%
Less than 5 years	66
5-20 years	38
Over 20 years	5

Source: Survey data.

In addition to one's superiors, one's equals provide a valuable source of informal help in placement. Eighteen percent of all new jobs are found through graduate school classmates, friends, professional colleagues, and former colleagues. The usefulness of such sources, and their accessibility, is largely dependent upon an individual's ability to keep up with his old friends and to make new friends. In the laboratory sciences, where graduate study tends to be the most cooperative and communal, classmates and colleagues are more likely to be a source of leads.

Evaluating informal methods as a whole, from Table 1 it is obvious that these methods play a dominant role in the academic labor market. For those who did not use a particular informal method, the most frequent reason given was that the individual did not have the right contacts.

THE FORMAL METHODS

Letters. One of the most surprising results of the study is the frequent and successful use of the direct letter of application, the letter sent cold to a prospective employer. Of all methods, it is used most frequently. Nearly half of all newly hired professors have written "blind letters" and, on the average, they have found over two jobs through them. The real success and importance of the letter technique is shown by the fact that 19% of all teachers find the job they actually accept by this method.

Considering only those who actively search for a job, direct application is the leading method by which jobs are found. In this respect the academic labor market is remarkably similar to most blue collar workers markets and to the market for lower eschelon teachers.[3]

Letters are used throughout the entire spectrum of candidate quality, institutional quality, and academic rank. The biggest letter writers are, as the theory of job search predicts, those who have the greatest prospect of finding a vacancy and, more generally, those who stand to benefit more from an extensive job search. For example, students write more letters (average = 10.2) than last year's faculty (7.5). Aspirants to junior faculty appointments write more often than persons seeking associate and full professorships. Younger seekers are more prolific than older. Non-doctorate holders send off more letters than those with the Ph.D.

Letter writing is a low cost and an efficient means of making one's availability known. It is an indication of willingness to consider seriously a job offer from the IHE contacted and, therefore, encourages the IHE to make such an offer. In a seller's market, where suppliers may be discriminating about the offers they accept, employers often welcome an early statement of interest. Instead of dissipating hiring effort upon candidates who ultimately reject the offers tendered, employers will often prefer to follow the leads of direct inquiries.

For the very reason that a letter of inquiry is a commitment to consider seriously a job offer, many candidates, especially those who are not actively in the market, do not write such letters. As shown in Table 3, which will be referred to frequently, the main reason for not writing blind letters is a reluctance to becoming too committed to moving. Many persons do not want to be "that" active in job seeking. Although a small minority (4%), mostly students emerging from prestigious graduate schools, avoid letter writing because they regard such behavior as "unprofessional" and another slightly larger group (9%) view this technique as "worthless," in most minds the method is respectable and worthwhile.

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[3] Joseph Kornegay, studying the public schools of one state, reports that 50% of the vacancies in primary and secondary schools are filled as a result of "blind letters." A Study of Practices in the Selection of Teachers ("M.A. Thesis in Education"; Chapel Hill, N. C.: University of North Carolina, 1946), p. 11.

Table 3. Attitudes Toward Formal Placement Liaisons

TYPES OF LIAISON	REASON FOR NOT USING METHOD***							
	NO REASON: USED METHOD	UNPROFESSIONAL	WORTHLESS	INACCESSIBLE	IGNORANT	FEAR	NO NEED	NOT LOOKING
Blind Letters	46%	4%	9%	3%	1%	*	15%	23%**
College Placement Office	36	2	14	2	2	1	18	23
Church-related Service	5	4	17	8	20	*	19	23
Professional Assn.****	14	1	13	5	8	*	34	23
Ad: Candidate Available	3	15	20	3	8	1	27	23
AD: Position Available	9	5	19	4	7	*	31	23
Convention Service	14	2	12	9	11	1	27	23
Public Employment Serv.****	3	4	21	3	25	*	21	23
Private Employment Agency	7	11	22	2	8	*	25	23

Source: Survey data.

*/Less than 0.5%

**/Rows do not always total 100 due to rounding and because some respondents did not answer the question.

***/Except for the first column, the percentages cited are derived from the answer to the question, "indicate which of the reasons listed below best explains why you did not use the method." The options given were:

(A) It is unprofessional to use this method. It is beneath the dignity of a college professor.

(B) Good jobs are rarely found by this method. It takes more time than it is worth.

(C) Good jobs are found by this method but I did not have the right contacts.
(D) I did not know that jobs could be found by this method.
(E) Good jobs are found by this method but I was afraid my then current employer would find out that I was looking for another job.
(F) Good jobs are sometimes found by this method, but there are better ways. I would have pursued this method if I had not found a job by other means.
(G) I was not looking for a job in any way.

****/ Excluding convention placement service and advertisements in professional journals.

College Placement Offices. College placement offices are the most important of the organized liaisons in the market. To supplement the informal efforts of major professors and department offices and to support them, most of the larger graduate schools have offices of college placement that provide special services to prospective college teachers. The sophistication of these services varies greatly. In many schools college teacher placement appears to be an afterthought of an active industrial placement program, or of high school teacher placement efforts. But there are a large number of IHE's that have developed full scale services. The volume of vacancies and candidates processed at the University of Wisconsin and the University of Illinois, to mention two schools with which I am familiar, is large enough to justify and necessitate the aid of a computer in matching. At another Big Ten school, the University of Michigan, in one year over 1000 candidates were "exposed to" over 7,500 vacancies in college teaching. Academic placement at Columbia, historically the largest producer of the nation's Ph.D.'s, is handled by an office separate from both teacher placement (primary and secondary) and industrial placement. College teacher placement has become a service that most graduate alumni expect from their alma maters.

The college placement office service is valuable to the scholar, the school, and the nation. That 8% of all students actually found their jobs through their placement office testified strongly to their usefulness, but even this statistic understates the overall usefulness of these offices to the market.[4] Besides actually locating jobs, the relatively newly formed placement offices relieve departments and individual professors from the time-consuming tasks of developing credentials on candidates and advising candidates about market conditions and opportunities. In many cases, the credential referral service provided is used and the locator service is not. Asking a person how he first learned about a job is inevitably understating the importance of college placement bureaus. The very valuable services of referring recommendations and credentials to jobs located by other means and of counseling never appear in the statistics. Often candidates register with the specific purpose of developing a dossier, already knowing the location of their job for next year. Placement officers argue, and correctly so, that a permanent record of one's graduate school performance, including letters of recommendations and candid evaluations of potential, can be an asset valuable in finding future jobs as well as the first one, especially since the memories, indeed the lives, of graduate mentors are finite.

As the academic labor market has expanded due to more and larger institutions, the need for a staff-oriented service, such as that provided by the college placement offices, has increased. The job load is too great to be carried by the now inadequate informal communication network. The great graduate institutions are no longer the only educators of college teachers, for many of the lesser institutions have sought to establish and enhance their stature by expanding their work to the graduate level. Even within the great graduate schools, the once simple institutional structures have grown to multifarious proportions. The old-time department chairman typically assumed the responsibility for almost all duties that had to be carried in behalf of the department, including the placing of faculty. Today, the larger universities have special vice-presidents in almost every field who are continually offering their assistance to department chairmen: a vice-president in charge of recruitment, vice-president in charge of questionnaire completion, vice-president in charge of research contract management, and the like. The new style department chairmen are finding that they can save a great deal of time by delegating many of their responsibilities to these staff specialists.

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4. To test the accuracy of our response, 300 questionnaire respondents, all of whom answered that they had not consulted their college placement office when seeking new employment, were singled out for intensive study. Their names were sent to the placement offices at their graduate schools in order to learn if they responded correctly to our question. The placement officers were asked to indicate whether the named persons had registered with them during the last recruiting season, and, if so, how they aided the named in finding a job. Almost all placement officers responded. In slightly less than 10% of the cases, the individuals who failed to check that they had consulted their college placement office had in fact registered. There are indications that most of these individuals had used the office for the credential referral service, but not the locator service. The individuals had interpreted our question to mean help in finding jobs, not help in getting them. Although there may be some slight understatement of the true significance of college placement offices in our statistics, the understatement is not large.

Because of the increased complexity of the market, a recruiting school no longer knows whom to write when looking for candidates in a given field. No longer do most employers have entries into the informal market. Seldom are graduate school mentors able to handle the work load of correspondence involved in placing their students. Moreover, because many hiring institutions desire to hire in more than one area of specialty, the addressing of one notice of multiple vacancies to a central campus placement office is a valuable convenience.

In response to the greatly increased need, the college teacher placement offices have been established and have flourished. If the pattern set in the first half of the decade continues for another five years, and there is no reason to expect that this has not been the case, the workload of the typical teacher placement office has quadrupled in the last ten years.[5] Most of the more effective efforts are located in the Great Plains and the West, though they are spread throughout the nation.[6]

The primary users of the placement offices are on-campus students, 46% of whom seek help from this source. In contrast, only 31% of the experienced faculty and 24% of the new teachers entering from outside academia consult them. One of the primary problems with graduate alumni is that after they leave the campus they are not aware of the services offered or do not feel that access is easy. Although some schools have succeeded in enlisting the registration of alumni, (e.g., the University of Illinois where two-thirds of the registrations are of alumni) successful efforts are rare.

As a rule, to both alumni and emerging students, the usefulness of a college placement office is heavily dependent upon the attitude of the educating department. Graduate student placement is often the time-honored, jealously-preserved right and responsibility of the department and any offer of help is regarded with suspicion. At the same time, the potential beneficiaries of the services often view the placement office with suspicion. Since the relationship with the office is artificially created for the express purpose of help in placement and since the placement officer is often not trained in the sub-specialty of the man whom he is helping, the label of "unprofessional" is sometimes given to the services.[7]

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[5] Lloyd D. Bernard, "Trends in the Placement of College Teachers," Current Issues in Higher Education (Washington: Western Association for Higher Education, NEA, 1960), p. 251.

[6] Fifty-three percent of the graduate students in the Great Plains and the West use college placement offices, compared to 39% in the Northeast and 46% in the Southeast. The distribution of placement offices for these same regions is 63.6% in the Great Plains and West, 22.5% in the Northeast, and 13.8% in the Southeast.

In many areas, however, neither the candidates nor the departments can afford the traditions of academic labor markets. Faced with the real need to place candidates and to find jobs, specialists in excess supply disciplines have sought out help from the placement offices.[8] At a comparative disadvantage the less qualified, non-Ph.D. holders seek the help of the placement office more often than the Ph.D.'s.[9]

One of the largest acceptors of the college placement office concept is the candidate trained in education. This is because the office is often tandem to primary and secondary teacher placement. Persons in education are familiar with the placement office concept because it is used so frequently in the lower level institutions. Often individuals register with the idea that they will enter either high school teaching or college teaching, depending upon which opportunity offers the most promise.

Although emerging students seek help from college placement offices more than any other group (as classified by last year's activity), both in absolute and in relative terms, and although over 2,500 of these same students actually find their best jobs through the placement office--the ex-secondary and primary school teachers are, proportionally, the largest beneficiaries of the help offered by placement offices. Nine percent of those coming to college teaching from teaching positions in lower eschelon schools find their jobs through a placement office.

A more complete understanding of the role played by college placement offices can be gained by an analysis of their registrants and of the types of jobs that are located through them. The notion that only the marginal, starting positions and only the poorest candidates are listed with these offices is false. It is true that many of the positions listed are the least attractive ones, but there are good jobs and good candidates registered with the placement offices. Forty-six percent of the

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[7] The "unprofessional" tag is less frequently associated with college placement offices than it is with other formal methods of search. (Refer to Table 3.)

[8] Percentage who consult placement office in search, by the shortage index--Excess Supply Disciplines: 43%. Excess Demand Disciplines: 31%. The difference is significant by chi-square at .05 interval of confidence.

[9] Percentage who consulted placement office in search, by educational attainment--Less than Ph.D.: 40%. Ph.D. Holders: 31%. The difference is significant by chi-square at .05 interval of confidence.

Table 4. Characteristics of Job Found by the Formal Method Used*

JOB QUALITY	BLIND LETTERS	COLL. PLACE. OFFICE	CHURCH SERVICE	PROF. ASSN.	AD: POSTN. AVL.	CONVENTION	PRIVATE EMPLYMT SERVICE
SALARY:**							
$9500 & Above	2%	4%	0%	0%	0%	9%	0%
$8000-$9000	12	12	18	5	27	13	17
$7000-$7999	31	28	18	50	55	26	28
$6000-$6999	34	40	18	40	14	43	39
$4500-$5999	21	16	45	5	5	9	17
TEACHING LOAD:							
7 hrs. or less	13%	8%	2%	17%	15%	16%	6%
8-10 hours	21	20	25	26	26	29	6
11-16 hours	61	65	56	51	55	53	79
17 or more hrs.	4	7	12	6	4	2	9
RANK:							
Instructor	47%	42%	53%	38%	27%	40%	41%
Asst. Prof.	43	45	33	40	59	54	26
Assc. Prof.	7	8	13	11	7	6	26
Full Prof.	3	5	0	11	7	0	7
SCHOOL QUALITY:							
Top 20%	10%	3%	0%	7%	2%	13%	5%
20%-40%	19	15	0	13	16	23	11
40%-60%	16	15	7	21	27	18	9
60%-80%	24	24	50	28	22	29	26
80%-100%	32	40	43	31	33	18	49

Source: Survey data and Prestige Index (explained in the appendix).

*/Public employment service and advertised candidates available are not included in this table because the numbers of persons who find jobs by this method, who are also included in our sample, are too small to allow statistically significant inferences.

**/The salary data are for emerging students only.

students in the top 10% of schools use placement offices as well as 54% of students in 10-40% range of quality. Ph.D.'s account for 40% of the users of this method, and non-Ph.D.'s only 60%.

As for the types of jobs that can be found through the college placement offices, a summary is presented in Table 4. Although a majority of the jobs pay less than $7,000 salary, carry a junior faculty rank, and require 12 hours or more of teaching--occasionally high paying, senior positions with low teaching loads are processed through placement offices.

The best single measure of the quality of a job is the institutional prestige rating. According to this measure, the major traffic at college placement offices is in the poorer jobs, but not all of it. Although the top-rated institutions rarely hire through the placement offices (only 3% of all jobs found through CPO's are in these institutions), there are a number of middle-quality IHE's that do a significant amount of their hiring through this liaison. Only 1% of the openings at the top schools are filled through the CPO's. But, 6% of the openings in the next eschelon of IHE's, the 20-40% group, are filled via placement office help.

Servicing primarily those who have difficulty gaining access to informal channels of communication, the CPO's which assist in filling 9% of the vacancies in the lowest eschelon of schools, are a major factor in the entire market. Their largest role is played among emerging students and lower level jobs, but they occasionally service other positions and other candidates as well.

Church-Related Agencies. Over 500 4-year IHE's, a substantial majority of these privately controlled, maintain more than a nominal relationship with a religious group, Catholic, Jewish, or one of the Protestant denominations. Most of the religious groups sponsor more than one school. For example, there are more than 100 Methodist IHE's and more than 200 Catholic colleges.

To provide staff assistance and, to varying extents, coordination also, many of the denominations with multiple schools have established an "office" or "board" of education within denominational headquarters. Vested with the responsibility of aiding individual institutions wherever possible, many of these boards have realized the similarities in the recruitment problems of their schools and have acted to help. Although the nature and scope of the help varies greatly, the services provided usually include the compiliation and distribution of the dossiers of persons who express interest in a position at one of the related IHE's. An individual files an application form with the board, the information on the form is distributed to administrators in related schools, and the administrators contact directly those candidates in whom they are interested. The more extensive services actually visit the campuses of graduate schools to explain the purpose of their service and to ease the mechanics of registration.

Realizing the basic similarities of their recruitment problems and the tremendous economies of scale available from a cooperative effort, eleven of the Protestant denominations have formed The Cooperative College Registry. Members of the registry are pledged to interview candidates at an allotted number of graduate schools and to share the registrations they receive as a result of these visits with other members of the Registry. A more complete description of this effort is in the next chapter.

The denominationally related placement office represents the most common specie of an entire genus of employer-related "placement agencies." Other groups of schools with similar recruitment and staffing problems have also related together in cooperative effort. The Near East College Association, for example, develops a list of candidates interested in being considered for teaching positions in Lebanon and Turkey. Also, the consolidated offices of many state universities and colleges are starting to provide a service not dissimilar to that provided by the denominational placement service, the Wisconsin State College System being a case in point.

Especially for schools with similar, though unusual, characteristics (e.g., the Near East Schools), the employer-centered placement service makes sense. By registering with the service, an individual candidate expresses a statement of tastes. He says, in effect, that he is willing to teach in the Near East, or that he is willing to teach at a Baptist college. If it is highly probable that most prospective candidates will turn down jobs offered because they are not willing to teach in the Near East or in a Baptist setting, then the self-selecting aspects of the placement service are indeed valuable.

Also, by conducting their own placement service, the employers' representative is able to pre-select those persons who would not be given serious consideration if referred to a particular employer. Here the employer-related center has an advantage over the typical placement agency. For example, a denominational agency can choose not to refer candidates who are not of the denomination of the controlling school, if this is the hiring policy of the school. By knowing the schools better because they work with fewer, the persons in the employer-related offices have special advantages.

One of the largest problems faced by the employer-related placement agency is in making itself known. Ignorance of the services provided by denominational bureaus is the reason given by 19% of Protestants for not using these agencies, 23% of Catholics, and 25% of Jews.[10] But there are other reasons why people do not use these agencies. Chapter 12 discussed the fact that people without a religious preference definitely avoid moving to denominational schools. Thus we expect candidates without religious preferences to be conspicuously absent from lists of denominational bureaus. Chapter 12 also discusses a slight tendency for the religious faiths to hire within their own denominations, but a significantly greater difference exists when a comparison is made between Catholic, Protestant, and nondenominational. This suggests that the cooperative efforts of the Protestant schools, for example, play an important role in this sub-sector of the market.

Still another reason for not using the denominational placement offices is the type of employers for which they recruit. Most of the denominational schools are the smaller, liberal arts-oriented colleges and junior colleges. As indicated by Table 4, which shows that 93% of the jobs found through denominational placement offices are in the bottom 40% of schools, in the few instances where a school with strong denominational ties has attained national eminence the school does not seek assistance from its denominational placement service. For the candidate interested in a university appointment at a high prestige school, registering with a denominational placement office is poor strategy.

All of this is simply to state the problems faced by church-related placement offices, not to deny their significance. Approximately 5% of all job seekers register their availability with these offices, and one out of five of the registrants actually finds his best alternative via this means. For the persons who have a strong preference for the liberal arts setting, especially one related to a church, registering with a church-related service is a valuable and efficient means of getting his name before large numbers of prospective employers with a minimum of effort.

Professional Associations. The candidates too have their associations, and these associations often provide placement services. From the American Nurses Association, which maintains the biographies of over 120,000 nurses and has placement staff at approximately 30 locations throughout the country, to the vest pocket operations of many executive secretaries of professional associations, the extent and nature of the services are quite varied. As early as 1937 Kotschnig writes: "...attempts to organize placing through professional organizations...vary widely in form, from the simple insertion of a 'Situation vacant and required' column in the professional journal to the placing service, complete with card indexes, files and a specialized staff...."[11] The large number of associations that provide

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10. For a similar idea see Dorothea De Schweinitz, *How Workers Find Jobs: A Study of Four Thousand Hosiery Workers in Philadelphia* (Philadelphia: University of Pennsylvania Press, 1932), p. 158.

some type of service is indicated by a report of the U. S. Office of Education which listed 112 associations providing placement services in 1961.[12]

This same survey reports, however, that the volume of service per association is not a significant factor in the market as a whole. Our study indicates that the same conditions prevailed in 1964-65. Although 14% of the college teachers use professional association services and 1.96 jobs are found per person, only 2% of the teachers actually accept jobs which they find through this method.

The real strength of the professional association placement service is in the market for experienced college teachers. When the contacts from graduate schools have faded, the professional association provides a rallying point for persons of similar abilities, training, and interests. Because the respectability of professional association sponsorship tempers some of the traditional attitudes that the use of formal intermediaries is "unprofessional," even those persons who are thoroughly indoctrinated to the do's and don'ts of academic job seeking are willing to seek assistance from their professional associations. As a result, the percentage of jobs filled at the rank of full professor is higher for this type of service than for any other (Table 4). The professional association placement service, separate from the service provided at conventions and in the classified advertisement pages of professional journals, is thus a significant factor in the market for experienced professors, even if it is not significant in the market as a whole.

Journal advertisements. Professional journals often allow space for advertisements of "jobs available" and "candidates available." For example,

> 136. Large, expanding, public, Midwest school in town of 37,000 has openings for 4 European historians. Salary and rank depend upon experience. The range is $6,500 to $11,000. Only Ph.D.'s and near Ph.D.'s will be considered. Publications preferred.
>
> H70. Man, 42, with 10 years teaching experience in well known public college desires position teaching Mathematics at good, liberal arts college. Ph.D. expected by September, 1966.

These advertisements might appear either in a specialized, disciplinary journal or a more general journal such as the AAUP Bulletin.

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11. Walter M. Kotschnig, Unemployment in the Learned Professions (London: Humphrey Melford, Oxford Univ. Press, 1937), p. 257.

Several countries, for example Sweden and England, regularly publish notifications of vacancies available so that anyone who wishes may apply. In the United States, where the number of vacancies is vastly larger, the same traditions do not apply. Vacancies are rarely published in a form for general distribution. The notices that do appear are widely scattered and often unread.

The more established schools, dreading the prospects of processing a flood of underqualified applicants and fearing questions about why they must resort to such unconventional methods of recruitment, are the most reluctant of all to use such techniques. Out of those who advertise their availability or answer a job available ad, only 2% find jobs in the top 20% of schools. Out of all the jobs in the top 20% of schools, less than 1% are found through advertising and virtually none are found in the top 10% of schools by this method.

The schools that do list vacancies are often rewarded by locating the man they want. However, individuals do not have the same reaction to answering ads about "jobs available" as they do to placing ads about their own availability. Placing an ad about one's self is considered "unprofessional" by 15% of college teachers, whereas only 5% consider answering ads about jobs "unprofessional" (Table 3). The prejudice also appears in the number of jobs found by each method. Answering ads accounts for nearly 2%, but advertising accounts for less than 0.5% of jobs found (Table 1). Different from the attitude toward placing "candidate available" ads, the most common view toward answering an advertised "job available" is that "if I can't find a good job by another method I will certainly try answering these ads." In most instances, however, jobs are found via other methods.

One would expect that the strongest attitudes against advertising one's own availability are held by Ph.D.'s, publishers, and candidates from top quality schools. It is true that these people do have the strongest "attitudes" against advertising and answering ads, but surprisingly these same groups of candidates are the ones who benefit most from advertisements. Not only do Ph.D.'s account for 63% of the users of job ads, but they also represent 64% of those finding jobs by answering an ad. Nineteen percent of the students who find jobs by answering ads are trained in the top 10% of schools. With respect to publications, 66% who find jobs by answering an ad have published.

The primary users of both "job" and "candidate available" ads are students and teachers in higher education. Journal advertisements are less accessible to those outside academia

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12. Placement Services for Personnel in Higher Education, U. S. Department of Health, Education, and Welfare (Office of Education, Washington, D. C., 1961), pp. 3-15.

who gradually lose connection with the profession. The department chairman in contrast to a dean or college president is the person most likely to place advertisements when hiring candidates.

Though jobs found through advertisements are usually not the best (Table 4), they are jobs, and it is not impossible to find good ones by this method.

Convention Placement Services. As pointed out earlier, the corridors and hotel lobbies at the annual meetings of professional associations are filled with talk about job opportunities, dissatisfaction with present jobs, and available candidates. In many disciplines--indeed most--some effort has been made to provide a more systematic method of bringing prospective employers and job seeking candidates into contact with each other while at the meetings. Often established are full scale placement services, beginning the day prior to the convention for its duration.

Procedural details vary, but the common format is to provide a list of prospective employers and descriptions of the job opportunities they represent, a list of available candidates and their qualifications, and a contact medium. One of the most extensive convention services, which is solely financed and operated by a professional association, is that operated by the American Chemical Society. Twice a year a staff of more than 50 aids over 500 candidates in finding jobs with more than 300 listed employers. Any member of the association and all bonafide employers may register.

Professional associations seem most willing to undergo the expense and effort required to provide an effective convention placement service if requested by either employers or association members. The greatest pressures to establish extensive convention placement services are in the disciplines where there are many employment opportunities outside the academic community (e.g., chemistry, physics, psychology). Both the candidates, who experience difficulty in identifying likely employers, and the business-government employers, who have very little access to the traditional sources of supply of highly trained personnel, feel that their special needs require such a service. Once the service is established, all types of employers and candidates tend to use it.[13]

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[13] Even though the candidates in disciplines where opportunities for employment are greatest (as classified by the ranking in the appendix explaining the Shortage Index) represent less than one-half of all new teachers, they account for 71% of those persons who find their new jobs through the aid of a convention placement service. The difference between the two groups is statistically significant by chi-square at the .05 interval of confidence.

The importance of the convention placement service as a force in the market has been steadily increasing in recent years. One of the primary reasons for this is the new role that the United States Employment Service (U.S.E.S.) is taking in the design and financing of such services. In eleven disciplines, the U.S.E.S. has, upon the invitation of the officials in the discipline, agreed to provide a complete placement service. Probably the most extensive and most successful is that provided to the Allied Social Sciences Associations in December. In 1963 this service helped 100 out of 1,000 registered applicants find their September, 1964 jobs.[14]

In general, the convention placement services are accepted means of search. Those who do not use the services often are those who do not attend the convention, or those who are unlikely to find jobs by that method because they are seeking positions in the very high quality institutions at high ranks. Especially among students, even those from the better schools, the "slave markets" at the annual conventions are accepted media. More than 50% of convention service users are students. Furthermore, there is a 10% greater probability that a student from the top 20% of schools will attend a convention than a student from poorest 40% of schools. This suggests that good schools urge their students to attend conventions.

Out of all formal methods, the convention placement service is least often considered "unprofessional" or "worthless" and is the most often not used because of a lack of contacts. There is good reason for the least number of teachers considering it a "worthless" method of search. Of all formal methods it turns up the greatest percentage of jobs in the top salary range, the greatest percentage in the top quality schools, and the second greatest percentage with the lowest teaching load (Table 4).

Public employment services. In addition to the convention placement services, the state-related offices of the United States Employment Service provide year-round placement help to professional workers, among them are college teachers. A nationwide network of over 100 professional placement offices gives aid in counseling and in locating candidates and job vacancies to those who wish to register their needs.

To date, with the notable exception of a few offices such as those in New York City and Washington, D. C., the concept of a public placement service to college teachers lacks realization. Only 3% of all job seekers use this method and, of these, an insignificant number actually find their best jobs.

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[14] Edwin C. Gooding, "The 7-Year Lag...the Market for Economists," New England Business Review, December 1964, pp. 11-12.

The college teacher labor market is a national one which is not easily adapted to the local and state orientation of these offices. Although some attempts have been made to nationalize the efforts of the Professional Placement Offices, these have not yet been effective.[15]

The further development of professional placement offices is hampered for two reasons. First, there is a low level of public acceptance resulting from their substantially negative public image. Nudell and Paterson reported that clerical workers in the late 1940's gave public employment agencies the poorest courtesy rating and the poorest rating on effort to secure candidates a job.[16] Henry Thole reported in 1958 that businessmen in the Kalamazoo, Michigan area were generally dissatisfied with referrals of U.S.E.S.; 44% rated their experience as poor, while the remainder rated their experience as good at best rather than excellent.[17] By the new college teachers whom we surveyed, both a lack of confidence in the ability of the public employment service to provide respectable jobs and a general ignorance of the services provided are expressed. One-fourth of the teachers feel that consulting the public employment service is either "unprofessional" or "worthless." If they are seeking top quality jobs at the better institutions this attitude is certainly justified, for these jobs are not found through the public employment service. In fact, very few college teaching jobs--good or bad--are found through the public employment service (Table 1). Part of the explanation is that very few candidates register their needs with the service, a reflection of the fact that, more than any other method, many prospective users do not know that the service is available (Table 3), as well as the negative image that it has.

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[15] One such effort is L.I.N.C. [illegible]

[16] Irving G. Nudell and Donald G. Paterson, "Attitudes of Clerical Workers Toward Three Types of Employment Agencies," Personnel, Vol. 26, No. 5 (March 1950), pp. 331-332.

[17] Henry C. Thole, Shortage of Skilled Manpower: Implications for Kalamazoo Businessmen (Kalamazoo, Michigan: W. E. Upjohn Institute for Community Research, 1958), pp. 30-31. For other reasons of non-use see Lloyd G. Reynolds, The Structure of Labor Markets (New York: Harper and Brothers, 1951), pp. 56-71. For a view that this attitude is changing and that the role of the U.S.E.S. is increasing, see William Haber and Daniel H. Kruger, The Role of the United States Employment Service in a Changing Economy ("Studies in Employment and Unemployment"; Kalamazoo, Michigan: W. E. Upjohn Institute, 1964).

The second restriction upon the spread of public employment offices comes from groups with vested interests in constraining the activity of these offices to traditional boundaries (i.e., to unemployment compensation and the placement of manual workers). A good example of the attitude of the opposing groups is this editorial note from an ASCUS Newsletter: "...all is not rosy, as it never is. One of our problems is the continuation of the efforts by the United States Employment Service to infringe on and eventually dominate educational professional placement. With millions of dollars of federal money to support them, and with many 'empire builders' seeing new fields to conquer, it behooves all educational placement people to know the problem and mend their defenses in fighting off the invaders."[18]

Private Employment Agencies. For a fee, usually 5% of the first full year's salary, private employment agencies will provide credential referral and locator service to the candidate seeking a college teaching appointment. At least two such agencies, the College and Specialist Bureau and the American College Bureau, make over 100 college level placements every year. Many other teacher placement agencies, which are primarily servicing teachers below the college level, also have limited traffic in appointments to IHE's. Seven percent of the new hirees, or roughly 2,300 register with an agency and 3%, or 1,000 persons actually locate their current employment through one.[19]

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[18] "Thoughts from the Editor's Desk," ASCUS Newsletter, Vol. 12, No. 2 (October 1964), p. 2. ASCUS is primarily an association for the personnel of college-operated teacher placement offices.

For an excellent bibliography of the controversy between U.S.E.S. and the College Placement Council, an organization representing all types of college placement personnel, see Haber and Krueger, op. cit., pp. 61-64.

[19] The figures cited in this paragraph are based upon the responses of newly hired professors when asked, "How did you look for and find your current job?" Of those who stated that they did not consult a private employment agency, eleven out of a randomly selected 300 were active registrants with one of the two agencies listed above. Although it is probable that some of the individuals who had registered with the private employment agencies had done so when seeking a job in previous years and did not view their current registration as active, whereas the private agency still maintains them in the active file, it is also likely that some of these eleven individuals had in fact registered and failed to indicate so on the questionnaire. Thus, the figures cited are probably a slight understatement of the significance of private employment agencies in the academic labor market.

There are certain advantages of using private employment agencies, both to the employer and to the individual. For employing officials "...it enables them to secure from one source a selection of candidates from more than one institution only."[20] Among all methods they allow the individual the largest selection of jobs to compare one against the other (Table 1). The idea that no one finds jobs through private employment agencies and that a majority of these agencies are not reputable must be recorded as a myth of our time. Almost all of the major agencies in the field are members of the National Association of Teachers' Agencies and as such subscribe to a rather rigid code of ethics. The commercial agency provides a valuable free enterprise outlet both to the institution and to the individual who does not have access to free alternatives and who, because of special needs or special circumstances, does not receive adequate service from these free sources.

One of the major drawbacks of using a commercial placement agency, to the individual, is the charge of a not insignificant fee. For a person entering an average teaching job, the fee may run from $300 to $600, the size of the fee being proportionate to the size of the salary earned in the located position. The method of billing militates against the use of the agencies by persons seeking high paying jobs and one year appointments. Virtually no one found a job in the top salary range through a private agency.

One of the real problems faced by private employment agencies is that most of the jobs listed are average or below average and at the beginning ranks, whereas most of the candidates registered are experienced, for the inexperienced students more often turn to the college placement office. Generally, the type of school using a private agency must hire at the bottom because of limited financial resources. In contrast, the individuals who need the agencies are typically those who have teaching experience and are ready for a promotion, but have lost contact with such informal channels as their graduate schools.

Although the agencies rarely list the top notch jobs or the very best candidates, their offerings include more than the very worst jobs and the least qualified candidates. A greater percentage of jobs found through private agencies are in the low quality schools and have the heaviest teaching loads of all formal methods, but jobs in the top quality schools, in the highest ranks, and with the lowest teaching load are not completely out of reach of private agency users (Table 4).

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[20] R. A. Walker, "A Program for Placing College Teachers," Current Practices in Institutional Teacher Placement, p. 95.

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It is understandable why commercial agencies are considered worthless by the greatest percentage of college teachers.

Private employment agencies are usually the last stop in seeking placement help, a stop that is not made until most other placement help has been sought. Of the jobs found by this method, 82% are bound by a commitment made between April and September compared to a 71% average for all formal methods and a 64% average for all informal methods during the same time period.

Other channels of information. Occasionally still other methods are used to look for and find jobs. Retired professors may, and do, register their availability for employment with the Retired Professors' Registry and the American Association of Emeriti. The names of N.D.E.A. Fellowship winners, Woodrow Wilson Fellowship holders, and recipients of Danforth Fellowships are circulated as a list of potential college teachers. These methods, and others discussed in this chapter, are elaborated in Volume I of this report.

SUMMARY

In terms of the percentage of teachers who use them and the percentage of jobs found through them, the informal liaisons undoubtably have the most important role in the allocation of college teachers among the various schools. Unlike the restrictions, whether economic or sociological, placed upon some types of formal liaisons, informal liaisons operate in every subsector of the academic labor market. Nevertheless, each informal intermediary has a peculiar function.

In general, former professors, graduate school departments, classmates, and colleagues channel candidates into the best jobs. Graduate professors and graduate departments most often serve the emerging student portion of supply, especially the Ph.D. and the surplus supply candidate, by passing on convention and personal tips. The typical candidate seeking the graduate professor desires a location similar to the former school. Former professors and graduate schools have the least information about positions very dissimilar to their own and become more inaccessible with passing years.

The function of formal liaisons, nevertheless, cannot be dismissed. In response to new market conditions, formal intermediaries have rapidly developed, each year consuming more financial and other resources. The handicaps to their usefulness are ignorance of their services and traditional biases.

Low cost and tight markets account for frequent and surprisingly successful use of letters, the leading method by which jobs are found, including informal methods. Although use is concentrated in the low ranks and among students, it is not completely limited to any sub-market.

The staff-oriented college placement office is the most important of the organized liaisons. Providing referral services and counseling as well as locator services, placement offices are taking more and more of the burden from graduate professors and department chairmen. Its greatest acceptance is in the education field. Students are the primary users, though secondary education personnel accept the highest percentage of jobs located through them. Winning the acceptance of department chairmen and enlisting alumni present their largest problems.

Since church-related agencies are employer-oriented, they serve the most limited sector of the market, church-related schools. The Cooperative College Registry is a good example of economical effort in this area. The unique service of denominational bureaus is to pre-select and match schools and candidates more effectively.

Professional associations are another example of agencies, which in response to the demand, expand their traditional functions to include placement services. Their chief contributions come through journal advertisements and convention placement activities. Top quality schools avoid advertising positions available, while individuals are very reluctant to advertise their own availability, but not to answer job ads. The rate of return of good jobs is highest for the convention services, which may be due to their wider acceptance and longer use. Also, convention services are being improved through the financial and staff support of the United States Employment Service.

The U.S.E.S. is not as successful on its own, however. The reason is primarily a strong public bias against it and an even stronger opposition by vested interest groups.

The commercial or private agency is one of the last resorts open to an individual in search of a teaching job. The main disadvantages of private agencies are high cost and an unequal match between jobs to be filled and candidates to be hired.

THE ADEQUACY OF MARKET INTERMEDIARIES.........CHAPTER 18

Any assessment of the network of communications in the academic labor market is insufficient without an evaluation of how well it operates. In this chapter estimates of the adequacy of the market communications network, as viewed by those securing a college teaching job in 1964-65, are presented and in the "recommendations" chapter in the last part of this volume, recommendations toward improving its effectiveness are presented.

PLEAS FOR IMPROVEMENT

Voices for reform have been heard from many quarters and for many years. Writing in the AAUP Bulletin, Craig in 1929, Dresden in 1938, and Fay in 1943 echo the same theme. In Eliot Fay's words: "This service of finding good positions for college teachers and good teachers for college positions has always been performed with deplorable inefficiency."[1] In his report on American human resources in 1954, Dael Wolfle made these remarks:

> Perhaps the most widely useful change in current customs would be the more systematic collection and dissemination of information concerning the specialized labor supply and the demand for their services, and the development of more efficient methods to facilitate the proper placement of trained specialists.[2]

Regularly at the annual meetings of the Association for Higher Education pleas for better placement are issued--for example, at the 1958 meetings:

> In the days ahead, much better communication must be developed between those hundreds of higher educational institutions which offer less than a doctor's degree and those which do. We do not know each other as well as we should. Channels of communication are not open.[3]

Also in 1958 a roundtable of economists, brought together at the annual meetings of the American Economic Association, iterated and reiterated the need for more structured markets, especially the need to coordinate the academic and the non-academic markets.[4] Much of what was said here repeated the alert raised by Mary E. Robinson and John Macy, among others, at an N.P.A. Conference held in Washington a year earlier.

Among many other pleas, the events surrounding the publication of Placement Services for Personnel in Higher Education by the U.S. Office of Education and the Conference on Placement Services in Higher Education sponsored by the American Council on Education in 1961 and 1962 provided a forum for a number of spokesmen. Among them was Frederick Bolman, then President of Franklin and Marshall College, who stated "our only hope for effective distribution of talent lies in improved procedures for placement."[5]

If these pleas are well founded, there are good reasons for improving communications now rather than later. First, some people will not enter the market until they actually know about vacant jobs. And, the efficiency of a free market is directly

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1. Eliot G. Fay, "Placement Service for College Teachers," AAUP Bulletin, Vol. 29 (April, 1943), pp. 283-284.

2. Dael Wolfle, America's Resources of Specialized Talent (New York: Harper and Brothers, 1954), p. 240.

3. Eugene W. Dils, Eleanor F. Dolan, and Richard G. Axt, "What Sources and Techniques Should Be Utilized in the Recruitment of College Teachers, and What Methods of Retention Should Be Employed?," Current Issues in Higher Education 1958, p. 187. Also see the paper by Marlowe Slater in the 1964 edition of the same publication.

4. The author is grateful to the Rapporteur, Mr. Robert T. Woodworth, for making available a copy of the complete transcript of this session.

5. Frederick deW. Bolman, Jr., "Placing America's Highly Skilled Manpower: College Faculty and Administrators," Educational Record, Vol. 43 (October, 1962), p. 295.

dependent on the flow of information. As our economy has become a maze of complexity and the problems of unemployment and underutilization have caused ever increasing concern, the importance of good communication channels has been magnified. Since academia develops human resources, its rank as a primary industry further increases its burden and the necessity of having the best communication liaisons.

It is not clear, however, whether these many cassandras have been speaking from the frustration to which they have been exposed in a small sector of the academic labor market or whether the lack of adequate channels of communication is general. At least one student of academic labor markets, Anantaraman, who studied the 1961 market for economists, suggests that the inadequacy is not general. In summarizing the results of his nationwide survey of experienced economists, Anantaraman reports that 53% of his sample considered communication channels to be "adequate" or "more than adequate."[6]

Before suggesting solutions to problems that may not exist, we will assess the extent and the nature of inadequate communications.

AN OVERVIEW: MODEST ADEQUACY

The adequacy of the market mechanism may be judged from several perspectives--that of the demanders, of the suppliers, or of the nation. The national welfare view is undoubtedly the most appropriate for economics. It would be desirable to develop a model of the ideal distribution of college teaching manpower, to contrast the ideal distribution with the actual, and thereby to develop a measure of the extent to which the current market mechanism is not serving the market as well as it might. Unfortunately, opinions of the ideal distribution of teaching manpower differ even more than opinions on the strategies of education. Elementary questions as "should all research in a subspecialty be concentrated at one or two institutions so that they might cross fertilize new ideas, or is it better to distribute the great specialists throughout the nation so that more graduate students may be given exposure to the great minds?" find no general agreement or immediate answers. Vital questions relating to the necessity of being an active researcher as a prerequisite to being a vital teacher lack unanimous or even near unanimous resolution. Moreover, even if an optimal distribution of teaching manpower could be determined, it would be difficult to decide the extent to which the market system per se contributes to the failure to reach the optimum--for the "irrational" actions of employers, the "non-economic" considerations in job choice, and the misconceived dictates of policy makers might also prevent the optimum from being achieved.

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[6] Venkatraman Anantaraman, Mobility of Professional Economists in the United States (Madison: University of Wisconsin, Industrial Relations Research Center, 1961), p. 16.

Rather than wrestling with these many problems and arbitrarily making questionable assumptions, we approach the evaluation of the market mechanism from a very different perspective--that of the persons most vitally concerned with its effectiveness, the suppliers to the market. After answering a series of questions about how they searched for jobs and how they found their current ones, newly hired college teachers were asked, "Which of the following statements best describes, in your opinion, the opportunities for learning about vacant teaching jobs in your field?" The options given, from which they were to check only one, were:

--Excellent. Vacancies are well known. There is almost no chance that a candidate will not learn about a vacancy for which he might be qualified.

--Good. With some effort, most candidates learn about most vacancies for which they might be qualified.

--Poor. Most candidates never learn about many of the jobs for which they might be qualified. New methods of informing candidates of job vacancies should be investigated.

--Very poor. A candidate rarely learns about the job vacancy that would interest him the most. New methods of informing candidates must be implemented.

Their answers indicate that a minority are calling for reform and that a majority feel that, under the current market arrangements, with some effort most candidates can learn about most vacancies for which they would qualify (Table 1). The market is serving the majority of suppliers to their satisfaction.

Table 1. The Adequacy of Placement

WORD THAT BEST DESCRIBES OPPORTUNITIES TO FIND JOBS IN YOUR FIELD	PERCENTAGE OF ALL NEWLY HIRED PROFESSORS
Excellent	7.4%
Good	57.7
Poor	28.9
Very Poor	6.0

Source: Survey data.

Yet, there is the poorly served minority: 10,000 professors that moved rate the mechanism as "poor" or "very poor." Where is this substantial minority located? Are there certain sectors of the market that are not being adequately serviced? Why are these professors not adequately served?

To consider the last question first, one of the answers may be failure to use the placement services that are available. It might be that those persons who do not find the placement system adequate simply do not use the facilities already available. Rarely does any job seeking professor search jobs by as many methods as he might. Virtually no one uses more than six or seven different methods of search; the average number of methods used is less than three.[7]

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7. Why people do not use the services available is an interesting and vital question to which a partial answer is provided by an analysis of our response. We asked, "Why did you not use each particular method of job search?," and offered seven response options (See Chapter 17, Table 3 for a complete statement of these options). The frequency that each reasons for not using a given method is cited, summed over all possible methods, gives a general indication of why intermediaries are not used. (A more specific indication is offered by the Chapter 17 table.) The distribution of the reasons cited for not using placement services is as follows:

REASON CITED	% OF ALL REASONS CITED
Unprofessional	6.9%
Worthless	23.5
Not Necessary	38.6
Inaccessible	15.2
Ignorant	14.9
Fear	0.8
Total	99.9%

Roughly one-third of the time a given method is not used because it is believed to be either "unprofessional" or "worthless." Another one-third of the time methods are not used because the candidate is ineligible (inaccessible) or ignorant. In the remaining one-third of the instances, the methods are not used simply because they are not needed.

The policy implications of these data are most interesting. When an individual says that he does not use a method because it is "unprofessional" or "worthless," it means that he anticipates the costs to exceed the benefits. To the extent that improved information can change the minds of professors who think that others think that job seeking by a given method is beneath the dignity of a college professor and to the extent that the skeptical can be convinced that the methods they rate as "worthless" are not so--the usage of market intermediaries may

If lack of use were a determinant of attitudes toward the adequacy of placement, we would expect the "satisfied group" to be those who use the system as it exists and the "dissatisfied group" not to use the system. A contrast of the two groups shows, however, that exactly the opposite is the case. Persons who did nothing to search for their current jobs are 25% of the "satisfied group" and only 16% of the "dissatisfied group."[8] Lack of use is not the answer to dissatisfaction. An alternative possibility is that the answer is linked to the differential adequacy of the mechanism in various subsectors of the academic labor market.

AREAS SERVICED LEAST ADEQUATELY

The effectiveness of the market mechanism in various sectors of the market can be studied by comparing the attitudes of faculty in various sectors of the market and with varying personal characteristics.[9] The general belief is that, although the market mechanism serves the best institutions relatively well, the smaller and lesser known institutions are not well served. The market mechanism functions relatively well for the well-trained, prestigious candidates and not so well for the marginal ones.

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be increased. Similarly, when an individual says that he is ignorant of a given method, usage may be increased by simply more widely publicizing the availability of the method. And, to the extent that the reason, "not necessary," is given for lack of use of placement intermediaries, it may be unnecessary to improve the market since a portion of supply feels that it is being adequately served by the methods it is using.

8. "Satisfied" includes those who rate the mechanism as "excellent" and as "good." "Dissatisfied" includes those who rate the mechanism as "poor" and "very poor." The differences between 16% and 25% are statistically significant by chi-square at the .05 interval of confidence.

9. The legitimacy of the complaints can be tested by correlating a teacher's attitude toward liaisons with his position in the market. The difficulty in drawing conclusions from these results is not knowing the direction of influence. For example, data show that teachers in low quality jobs complain more than those in high quality jobs. Do those in low quality jobs complain more because of their poor jobs, or do they complain more because the liaisons which serve them really are inferior to liaisons that serve better quality schools? Without knowing the magnitude of the influence of considerations such as quality, income, and rank, we can still say that at least 86%

In general, expectations are confirmed, although the data presented in Table 2 do not give a very strong vote of confidence to the hypotheses. Teachers locating in the top prestige schools are less often dissatisfied. The market mechanism operates significantly better for men locating in good jobs rather than poor ones, in high salaried positions rather than ones that carry a low salary, and in ones that carry small teaching loads versus those with large teaching loads. Researchers find market mechanisms to be more adequate than teachers. Students emerging from graduate school rate the market mechanism as more adequate than professors who are already out on their own.

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of the complaints are legitimate. This figure is computed by assuming that those well situated in the market (i.e., in a high rank, a high quality school, or a high income bracket) will report the most accurate evaluation of market intermediaries. In each of the categories above, at least 30% of the well situated said intermediaries are "poor" or "very poor." Considering this 30% as the minimum proportion of the complainers who are justified in their opinion, we conclude that "at least" 86% of the complaints are legitimate.

By correlating complaints against teacher characteristics, we can get a good estimate of the areas of the market which are most poorly served. Though a simple correlation will not allow us to make a statement about the direction of causation, it will allow us to make a better estimate of the proportion of complaints in a particular area of the market which are actually due to poor communications. If a coefficient of determination is computed for two variables "x" and "y", it gives the proportion of the variation in "y" which is explained by "x". All of the variation in "y" may actually be "caused" by some factor other than "x", but we can be more certain that "at least" the unexplained proportion is caused by some factor other than "x".

The coefficient of determination between ignorance of market liaisons and evaluation of opportunities to learn about jobs is 0.21. This means that at least 79% of the complaints are due to factors other than ignorance.

Ninety percent of the variation in evaluations can be explained by current income. Also, those with low incomes are most critical of the market communications. Thus, we can say that at least 10% of the complaints of low income teachers are related closely to the fact that these teachers receive poorer service than those in high income jobs.

In general, teachers rating their jobs as very poor also evaluate communications as poor. Ninety-three percent of this variation can be explained by their feelings toward their jobs. The unexplained 7% may be explained by the fact that those in poor jobs are not served as well as those in better jobs. This conclusion is supported by the consistent relationship between low quality of job, low rank, low income and a poor evaluation of the opportunities to learn about jobs.

Table 2. Inadequacy of Market Mechanism, by Selected Subgroups

CHARACTERISTIC OF SUBGROUP	PERCENTAGE RATING CHANNELS AS VERY POOR OR POOR
Opinion Toward Job Accepted:	
Excellent, better than I expected	31%^{s}
Very poor, unacceptable	64
Orientation:	
Spend more time teaching	36
Spend more time researching	32
Quality of Current School:	
Top 20%	31^{s}
Bottom 20%	39
Quality of Last School (last year's faculty only):	
Top 20%	31^{s}
Bottom 20%	39
Size of current school:	
Under 1000 enrollment	36
Over 5000 enrollment	35
Highest degree held by individual:	
Doctorate	35
Non-doctorate	35
Activity last year:	
Student	31^{s}
College Teacher	39
Current Academic Rank:	
Junior Faculty	35
Senior Faculty	33

Source: Survey data and Quality Index.
s/means that difference is statistically significant by chi-square at .05 interval of confidence.

Yet, significant differences do not appear where they might be expected. The non-Ph.D. is no less adequately served than the Ph.D., the non-publisher no less than the publisher, the small college teacher no less than the large university professor. In spite of the fact that persons aspiring to senior faculty positions do not usually have help from their graduate schools, they view the market as more adequate than persons seeking junior faculty posts.

Unexpectedly, it is not always the least visible candidates and the least visible positions that are serviced least adequately. The attitudes of candidates toward the adequacy of placement suggests that those persons who are originally disadvantaged take action to overcome the liability. The non-Ph.D. holder pursued more methods of search so that, even though the informal market does not serve him, the informal with the formal market serves him well. On the other hand, the more qualified candidate who seeks a more conspicuous appointment fears that formal methods of job search will not help and is frustrated by his inability to make contact with employers. The non-Ph.D. who seeks a position at a small school feels that direct application will not injure his chances of getting such a job, but the Ph.D. aspiring to a prestigious post must make his availability known so circuitiously that he comes to believe that the market mechanisms are not adequate.

In certain disciplines, help is needed more than in others. Again, however, as shown in Table 3, repeated efforts to identify the types of markets that are not adequately served are to no avail. Patterns are not obvious. Dissatisfaction is equally present in large markets and small, in markets of excess demand and markets of excess supply, in the humanities as well as the sciences, in the fields with extensive outside employment opportunities and those without. There is one pattern, but it is difficult to quantify. In general, individuals in disciplines where the professional associations have taken a larger role in placement such as in French and chemistry are more satisfied. This is an encouraging sign to those many people involved in the placement efforts of professional associations. Other than this one pattern, it is extremely difficult to predict where the markets are least adequate.

In framing suggestions for improving the market mechanism it is therefore relevant to find a proposal that will have appeal to those in the disciplines of excess supply as well as those of excess demand, in the large disciplines as well as the small, to the larger employers as well as the smaller ones. The need for help is not restricted to any subsector of the market: neither to the least qualified, nor to the least conspicious. Although the most inadequately served by the present market mechanism is probably the young junior professor who has already left his graduate school but who has not yet attained the security and visibility afforded by a senior rank, all market sectors seem to be in need of some type of help. Though the majority is satisfied with the current market mechanism, the poorly served minority is spread throughout the market.

Table 3. Inadequacy of Market Mechanism

DISCIPLINE	PERCENTAGE RATING CHANNELS AS VERY POOR OR POOR
Political science	54%
General zoology	53
Civil Engineering	51
Physiology	47
Music	46
History	45
Sociology	43
English	41
Biochemistry	41
Economics	39
Education (Not el. or phys.)	39
Business and Commerce	39
Mechanical engineering	38
Earth sciences	36
Electrical engineering	35
Experimental psychology	33
Elementary education	33
Chemistry	32
Physics	32
Physical education	30
Chemical engineering	29
Fine arts (drama, art)	21
French	21
Mathematics	20

Source: Survey data.

EVALUATION OF THE VARIOUS MARKET INTERMEDIARIES

Also valuable in framing suggestions for change is information concerning the relative efficiency and effectiveness of the different types of market intermediaries. It is not sufficient to know only that there are legitimate complaints about the channels of communications and that some individuals are more poorly served than others. We also need to know which methods are the most efficient in finding jobs and which turn up the most desirable jobs at the least cost.

This information is supplied in Table 4. The first column, titled "frequency," is indicative of the popularity of the various methods used. The 46% (1) in the "blind letters" row means that 46% of all job seekers use this method to search jobs and that this method ranks first in frequency used. The implications of the data included in this particular column have been reviewed previously in detail. It is pertinent to point out again, however, that the informal methods are generally more popular than the formal ones--the two major exceptions being the very popular blind letters and college placement offices.

The second column of Table 4 indicates the "efficiency" of the various methods. Without judging the quality of the various jobs found, this measure is the quotient of the number of jobs found by a particular method divided by the number of people who use the method.[10] The individual who is interested in being exposed to a large number of jobs and not overly concerned about their quality would be well advised to study the rankings in this column. Here the real strength of the commercial employment agency is shown by the fact that it, more than any other intermediary, is able to supply the registrant with large numbers of job options. Blind letters are the second most productive technique, whereas individuals who consult publisher's representative, advertise their availability in professional journals, and register their needs with the public employment service find relatively few jobs--good, bad, or neutral. That is, even those very few persons who pursue these latter techniques are rarely rewarded. This may suggest why they are not used and is certainly a harbinger of the misfortune ahead for any proposed extension of the current market mechanism through these intermediaries.

The third measure of market media, desirability, is obtained by dividing the number of people who find their present jobs (which is assumed to be the best one they found as indicated by the fact that they accepted it in preference to the others) by a given method by the total number of jobs found by that same method. Although this measure tends to bias against those methods that produce a large number of alternatives, its main value is in indicating the quality of jobs found by a method. Where column two of Table 4 measures quantity, quality is measured by column 3. The most obvious conclusion to be reached from this column is that informal methods produce much better jobs than formal methods. The five first-ranking methods are informal.

Table 4. Evaluation of Various Market Intermediaries*

MARKET INTERMEDIARY	(1) FREQUENCY (% WHO USED)	(2) EFFICIENCY (# FOUND/ # USED)	(4) DESIRABILITY (# JOBS ACCEPTED/ # JOBS FOUND)	(5) IMPORTANCE (AVG. OF RANKS IN COLS. 1-3)
INFORMAL:				
Undergraduate professor	16% (8)	19% (8½)	25% (4)	5.6
Graduate professor	40 (2)	30 (5)	21 (5)	4.0
Graduate department	32 (4)	19 (8½)	11 (9)	4.5
Graduate classmate	17 (7)	18 (10)	29 (3)	6.7
Faculty colleague	20 (6)	35 (3)	31 (1)	3.3
Other professional friend	25 (5)	32 (4)	30 (2)	3.7
Publisher's representative	2 (16)	10 (14½)	11 (10)	13.5
FORMAL:				
College placement office	36 (3)	17 (11)	7 (13)	9.0
Convention placement service	14 (9½)	14 (12½)	6 (14)	12.0
Public employment service**	3 (14½)	7 (16)	5 (15)	15.1
Advertised availability	3 (14½)	10 (14½)	4 (16)	15.0
Answered an advertisement	9 (11)	22 (6)	12 (8)	8.3
Church-related service	5 (13)	20 (7)	10 (11)	10.3
Commercial agency	7 (12)	43 (1)	13 (7)	6.7
Blind letters	46 (1)	41 (2)	20 (6)	3.0
Professional association	14 (9½)	14 (12½)	9 (12)	13.3

Source: Survey data.

*/Numbers in parentheses are ranks in column.

A higher percentage of the jobs found by informal methods tend to be accepted. Though formal methods tend to produce large numbers of leads, the best offers result from the jobs found through contemporaries and former professors.

The fourth column shows the unweighted average of the ranks on the first three columns. As such it is a general measure of the popularity, efficiency, and desirability of various placement methods. It is quite interesting to note that blind letters are the most important market mechanism, even more so than various informal methods.[11] The great importance of friends--both contemporaries and former teachers--is shown by the relative low rankings assigned to these methods. The skeptics about commercial placement agencies will be surprised to find them ranking as the second most important formal intermediary. Though their main strength is quantity, for those that use the agency the quality seems to be the best they can find. Also, the relative high rank of "answered an advertisement" among the formal methods indicated that this may be a promising route when devising methods of extending the market mechanism.

The low ranks assigned to "publisher's representative," the public employment service, and the placing of candidate available ads is again another omen against extension of placement services via these means. Whereas the poor ratings given to the convention placement services and the professional associations may be attributed to the fact that in many disciplinary markets these are not possible routes of placement help, the low ratings of publisher's representatives, U.S.E.S., and "candidate available" ads must be attributed to the desire not to pursue jobs via these means and for good reason.

RECENT EFFORTS OF CONSOLIDATION

One of the biggest problems in the academic labor market today is thesplintering of market intermediaries. There are so many agencies and organizations willing to extend a helping hand

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10. A similar measure of efficiency is computed by H. E. Klugh, "Approaches to the Academic Market," American Psychologist, vol. 19, no. 8, (August, 1964), p. 672-673.

[11] Omitted from the entire discussion is "did nothing to find a job" which would probably rank first on all criteria, except number of jobs found.

to the candidate-seeking employer and the job-seeking candidate that the employer and the candidate often accept different hands. As a result, the desired and desirable match may never be made. One placement intermediary is frustrated by not finding the best candidate; and another intermediary fails to provide the best job to his registrant.

Yet there is plenty in the midst of poverty. Even though it is increasingly unlikely that a given intermediary will learn about a particular vacancy (candidate), the number of vacancies (candidates) has been increasing so rapidly that most agencies have more to process than they can handle adequately. So much time must be spent in the routine processes of registration that not enough is left for professional placement.

Recognizing some of the undesirable features of excessive decentralization and some of the economies of scale that may be achieved through cooperative efforts, several organizations have already taken steps to increase cooperation among placement intermediaries, and there are other moves toward consolidation that have not yet reached the action stage. Again, as prelude to the recommendations for changes in the market mechanism that are cited in the "policy implications" chapter, it is pertinent to review these efforts.

The first effort considered is the Cooperative College Registry. Only threeyears old, the Cooperative College Registry is a cooperative effort of recruitment by more than 200 colleges sponsored by ten Protestant denominations.[12] The main thrust of the Registry is to enlist the registration of emerging graduate students (and others when possible) who are interested in college teaching in a Christian setting. Following the lead of business recruiters, the Registry actually visits the campuses of over 120 graduate schools and 25 national conventions to talk with prospective candidates and to gain their registration. Representatives from each of the denominations take the responsibility of visiting an allotted number of graduate schools and subsequently sharing the one-page registration forms that result from the visits withthe ten other denominations. Once the names are collected and distributed to the denominational headquarters of the various church groups, each of the ten offices takes the responsibility of determining how best to inform the administrations at their various colleges. Some of the denominations distribute them to the hiring officials at their schools brief biographical sketches of the registrants and suggest that the officials request more information on the candidates who interest them. Other denominational groups offer a matching service by responding to an expressed need to fill a vacancy with a search of their files for appropriate possibilities.

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[12] Evangelical United Brethren, Lutheran Church in America, United Church of Christ, Presbyterian Church in the U.S., United

At the time they register, candidates are told that, although it is almost certain that some schools will be contacting them, the registry offers broad visibility to a large number of employers but it is not a candidate placement agency. The candidate will not receive notices of vacancies. He will not even know when his name has been referred and when inquiries have been made about him, until the interested employer makes the contact.

The success of the Cooperative College Registry is attested to by the fact that in its second full year of operation (1964-65) approximately 5,000 registrations were processed and that, since seven charter denominations first engaged in the service, three other denominations have seen the advantages of joining in the effort. With less effort and expense, member denominations are finding that they may provide a more meaningful and more inclusive placement service to their related schools.

A second cooperative effort of a very different nature is among the teacher placement offices at the major graduate schools. In addition to the usual amount of sharing of information about the best procedures for running a placement service that one would expect to take place at conventions where the directors of these offices congregate, the professional association of teacher placement offices, ASCUS,[13] has already taken two steps to relate the individual efforts of its members and is contemplating a third. The first of these is the Reciprocity Agreement.[14] When an individual prefers a type of teaching position in which his home office has very little traffic (e.g., openings in a small New Jersey college by the placement office at Stanford), the home office may request help from another member of ASCUS. It might, for example, refer the candidate's folder to the placement office at Rutgers which would, for the placement year, treat the candidate as one of its own. The reciprocity agreement was instituted primarily for high school and primary school teachers, where the markets are usually very much oriented by state. In the case of college teaching, where the boundaries of employer search are not usually restricted to the same state or even the same region, the necessity of this type of cooperation is less, as are its benefits. In fact, there are relatively few candidates for college teaching positions that are currently referred across state boundaries. Nevertheless, the reciprocity agreement, and its operation in the lower eschelon teaching

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Presbyterian Church, U.S.A., The American Baptist Convention, American Lutheran Church, the Disciples of Christ, The Southern Baptist Convention, and the Church of the Brethren.

[13] Association for School, College and University Staffing.

[14] A copy of the agreement appears as "Reciprocity Policy Reviewed for Old, New ASCUS Members," ASCUS NEWSLETTER, Vol. 12, No. 2 (October, 1964), pp. 8, 11.

positions, is a valuable indication of the type of cooperation of which the ASCUS-related offices are capable.

More pertinent to the college teacher labor market is the second phase of cooperation among ASCUS members. At most of the conventions where employer-administrators congregate (e.g., Association for Higher Education, American Association of Colleges for Teacher Education, North Central Association) the members of ASCUS maintain a "headquarters" where employers may stop by to register their vacancies and staff needs for the next year. At the 1964 convention of the North Central Association in Chicago, for example, representatives from 21 different placement offices manned the headquarters where 54 colleges located in 17 states listed 165 vacancies.[15] Following the convention, a list of the vacancies is distributed to all members of ASCUS.

At its November 1965 convention, ASCUS authorized a special committee to investigate affiliating with the College Placement Council of Bethlehem, Pennsylvania, in providing a nationwide, computer-based matching service to college teachers and their employers. Such a service would probably resemble that which CPC is initiating for college graduates seeking jobs in industry and government. Under this proposal, an individual job seeker obtains a standard job application and resume form from his college placement office. He completes the form, which is subsequently sent to the computer center at Valley Forge, and pays $10.00 to enter the system for a period of six months (subject to possible extensions). At the computer center, information from the resume is fed into the computer where the names and qualifications of thousands of fee-paying job seekers are kept in storage.

An employer looking for a new Ph.D. mathematician would simply submit inquiries to the storage center. Access to the storage is via teletype equipment. The university seeking the mathematician would simply place a long distance call to Valley Forge and request to be connected with the storage unit. Once connected, he would type out questions for the storage unit to answer. The questions would be typed on a machine that looks very much like a large electric typewriter on a special table. The computer would respond by teletype.

A dialogue might run: Employer: "Do you know of any Ph.D. mathematicians, under age 35, working at salaries less than $12,000 per year, married, willing to locate in North Dakota, moderate publications, and a subspecialty in mathematics for social scientists?" Computer: "57836, 12580, . . . 48572. More?" (The numbers are identifiers of individuals who have paid their $10 to enter the storage.) Employer: "Add the specification: currently employer in Middle West." Computer: "57836, 48572." Employer: "Print out resume of 57836."

Such an interchange would allow an employer instant access to a large segment of the market. The cost to the employer would be considerably less than the currently used, high cost methods of locating personnel. The employer would pay for the long distance phone call, about $5.00 for the use of the computer and $2.00 for each resume, plus the $100 or so per year to rent the teletype machine.

Even the parent system for industrial job seekers is not yet operational, but it will not be long. There are a number of problems connected with converting the system to be used by CPC for industrial job seekers to the college teacher labor market. Most of these problems are outlined in the last chapter of this volume under recommendations. One hopes that these issues will be resolved imaginatively before ASCUS makes firm a commitment to affiliate.

Another computer-based matching service, being designed more specifically for college teachers under a special grant from the Esso Education Foundation to the Association for Higher Education of the National Education Association, is reported in a recent issue of the Phi Delta Kappan.[16] Based upon similar computer-technology, MATCH would provide a broader range of options to a more inclusive group of employers and candidates. Still in the developmental stages, it is unclear exactly what services MATCH would provide. Among those under consideration are: 1) a roster of all persons capable of college teaching which could be consulted by employers, 2) a listing of all persons desirous of new employment (either temporary or permanent) in the academic professions, both in and outside the academic community, and 3) a listing of all job vacancies which could be consulted by job seekers (perhaps even those who do not register their own availability). MATCH is to take final form by September, 1966.

Still a third computer-based system is under preliminary consideration by the United States Employment Service. Discussions are being held throughout the nation with individuals in various disciplines who might want to avail themselves of the possible services. Already, starting in August, 1965, a plan for a year-round placement service to be provided by the U.S.E.S. for the American Library Association is in operation. Under this plan, any individual librarian may register availability with the service. By mail the candidate will receive a publication which lists the vacancies that have been brought to the attention of the service by employers. From this point forward, all negotiation is between employer and candidate. If this effort proves successful, there is a large probability that the public employment service will co-operate with other professional associations in providing a year-round service. Relationships have already been developed with a large number of professional associations as a result of the excellent services provided by U.S.E.S. at annual meetings,

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15. "ASCUS Provides Placement Services at Conventions," ASCUS NEWSLETTER, Vol. 12, No. 2 (October, 1964), pp. 9,11.

16. George E. Arnstein, "MATCH: Square Pegs for Square Holes," Phi Delta Kappan, November, 1965, pp. 122-125.

and a number of the associations have expressed interest in the year-round service.

With the exception of the nationwide efforts of certain professional associations,[17] the only other effort that could be construed as a cooperative placement service is the National Register of Scientific and Technical Personnel which is maintained by the National Science Foundation in cooperation with the scientific societies. In 1962, over 215,000 natural scientists had their professional biographies on file with the Register. Since this date, in addition to adding more natural scientists, the Register has expanded its coverage to the social sciences. Here, at one point, is a listing of the scientific manpower resources of a nation.

At the present time, it should be stressed, the Register is in no way involved in placement. Although the Register (then the Roster) was developed to assist in the placement and utilization of scientific manpower during World War II,[18] and it is presently being maintained with the thought that it would serve much the same role in another national emergency of major proportions, at the present time the Register officials have resisted the temptation of allowing it to be a resource upon which the recruiters of scientists may draw. The Register officials fear that if they allow the Register to become primarily a placement operation, many scientists will fail to register with them. They would, therefore, not have an accurate and complete inventory of scientific manpower.[19] Thus, although the Register might be called a cooperative effort in placement among various professional associations as coordinated by the National Science Foundation, it would properly be so labelled only in times of national emergency. There has been some limited talk about working directly with the professional associations and capitalizing upon the names they collect for the purposes of the Register in the formation of a placement agency which is independent of the Register. These talks have not, however, proceeded very far.

Although it is tempting at this point to enter into a discussion of the relative merits of the various plans mentioned above, both the ones in operation and those proposed, in an attempt to keep the main body of this report as factual as possible and to consolidate opinion in the final chapters, we will explore relative merits later. At this later point I shall enter into an evaluation of the services and make some additional proposals.

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17. For example, the cooperation between the state associations and the national association of nurses and the various services provided to the national conventions of professional associations.

18. "The American Brain Barrel: How Scientists and Specialists Were Mobilized for War Work By means of a 'National Roster,'" Fortune (March, 1945).

19. My personal opinions on these and other matters are reserved for the policy implications chapter.

JOB CHOICE IN THE ACADEMIC LABOR MARKET.....CHAPTER 19

Before turning to a discussion of the theoretical and policy implications, it is relevant to analyze in detail one final aspect of the market--the decision making process of the suppliers. Why do professors accept one particular job and reject the other offers? What are the determinants of job choice? Information on job choice will increase the general understanding of mobility, for it is primarily the decisions of suppliers that determine the direction of movement in the academic labor market.

The whole question of job choice is a very complex one, one that an economist must approach with caution. Even a cursory treatment of the subject suggests that motivations for choice are often unclear to the chooser and inconspicuous to the observer. Moreover, job choice is somewhat individualistic. Many factors impinge upon most decisions and the factors are rarely given the same weight by two different professors. Even for the same individual, the importance assigned to a given job characteristic often changes as he moves from a decision to leave a job, to a judgment about what types of offers to seek, and finally to a choice between the two best job offers received. At some stages, individuals evidence a willingness to "trade off" one job factor for another, although the equivalents are not always determinable. Realizing the dangers and difficulties involved, yet also recognizing the importance of some assessment of the determinants of job choice, this chapter presents the evidence now available.

THE EXISTENCE OF A DECISION

If professors had only one job option from which to choose, the choice process would be irrelevant to an analysis of the direction of mobility. Movement would be determined solely by job availability and the theory of job search would be sufficient to explain job choice.

Empirical evidence shows, however, that professors have multiple options to consider and that an explanation of job choice is necessary. Four-fifths of all newly hired professors consider at least two concrete job offers and more than one-fifth consider five or more offers. The mean number of offers considered seriously is three.

Actually, "three" significantly understates the number of offers and prospective offers that the typical professor must consider. Three is only the number of job options carried to the final decision-making stage. Prior to this time decisions are made constantly. For instance, the professor may decide not to write junior colleges because he has no interest in this type of job. He may decide not to follow up many of the vacancy notices received by his placement intermediary because the terms of employment are unacceptable. In fact, the entire job search theory is based upon the calculus of expected benefits, calculations that require the evaluation of job options and thus decision-making.

Professors are not left the easy, though undesirable, option of accepting the only job available. They are constantly faced with decisions about the comparative desirabilities of various job options. Moreover, as the system of higher education expands and the market mechanism is improved, the individual professor will be made aware of still more job options and therefore faced with additional decisions. An explanation of this choice making process cannot be avoided.

THE RELATIVE IMPORTANCE OF CHOICE VARIABLES

Examination of the literature, interviews with college faculty, the questionnaire response of college faculty, the results of similar labor market studies of workers other than professors, and casual empiricism point toward a number of factors whose importance in the job choice process deserves to be assessed. The factors may be classified in three generalized categories: those relating to compensation, to the job itself, and to the living environment connected with each job. Within the compensation group are factors such as salary, opportunity for outside income, fringe benefits, prospects for future salary and income, and academic rank. The specific factors relating to the job itself range widely from academic freedom and the ideals and objectives of the IHE's administrators to the prestige of the schools among fellow scholars.

Also included are factors such as the opportunities for research and teaching (research facilities, course load, attitude of the administration), and the nature of teaching assignments (course taught, quality of students). Environmental factors important in job choice include the climate and weather, the accessibility of recreational facilities and the performing arts, the social and political climate of the community, state, and region. Other important environmental factors are the congeniality of immediate colleagues and the location of the job in juxtaposition to friends and relatives. If this is not an exhaustive list, it is nearly so and certainly includes all of the variables more important in the job choice decisions of most individual professors.[1]

Without depth interviewing by experienced psychiatrists, the accurate assessment of true motivation in job choice is impossible. Nevertheless, rough approximations of the extent and the nature of each of these factors can be obtained through less rigorous methods. Although the resulting relationships may not be precisely realistic, they will be at least suggestive of what might be done if more were known about motivations for job choice.

To measure the influence of the 17 factors, we asked, "How important were each of these factors in your decision to choose your current job instead of your next best alternative?" Answers were forced to three options. By weighting every "very important" answer by five, "important" by three, and "not important" by one and dividing the sum of the products by the total number of answers, an ordinal index of importance was derived. Thus, if 50 persons were surveyed about factor A, 10 answered "very important," 35 answered "important," and 5 "not important"--the index would be 3.2.

The index accounts for both the frequency with which various factors are considered and the strength of their consideration. Larger index values indicate that the factor is more crucial in the job choice decision.

According to this index, as shown in Table 1, the most influential factors are those surrounding the characteristics of the work assignment: the courses to be taught, the hours of classroom teaching assigned, the competency of colleges, and the availability of research facilities. Locational and environmental factors, such as climate, nearness to friends and relatives, and nearness to one's graduate school, are less often determinative in the choice decision. Compensation factors, such as salary and rank, are more important than the locational and environmental variables but less influential than the nature of the work assignment.

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[1] The a priori rationale for selecting each of these factors is presented in Chapter VII of The Market for College Teachers and is not repeated here.

Table 1. Determinants of Job Choice

CHOICE VARIABLE	CHOICE INDEX*
Courses taught	3.7
Teaching load	3.4
Research facilities & opportunities	3.3
Competency of colleagues	3.3
Salary	3.2
Future salary prospects	3.2
Reputation of school	3.1
Quality of students	3.1
Administration & administrators	3.0
Cultural opportunities	2.9
Congeniality of colleagues	2.9
Academic rank	2.8
Fringe benefits	2.4
Nearness to graduate school	2.4
Climate	2.1
Nearness to friends & relatives	2.1
Moonlighting opportunities	1.8

Source: Survey data.
*/See text for method of computation.

VARIATIONS IN IMPORTANCE

The Table 1 listing must, however, be interpreted with care. Though the rankings presented are typical of all college teachers, they are not always an accurate representation of the stress given by an individual professor, or by selected groups. For example, big publishers (10 or more journal articles) rate "research facilities" as the most important factor in job choice whereas professors who have published nothing ranked this factor fourth. These statistics, and many other comparisons, are shown in Table 3. The rank of "1" in the "Orientation: Research" column and the "Research Facilities" row means that for the group of professors who have published ten or more articles "research facilities" is the factor which is considered most often and most seriously when choosing among their two best job offers. That is, for the research oriented group of professors the choice index is greatest for "research facilities."

Environmental factors. The first set of choice-influencing factors that will be considered are the ones relating to the "academic environment." Environment refers to all factors, physical and psychological, associated with a particular job offer but not actually related to the duties of the position or the characteristics of the institution involved. Environment is thus the setting in which a job places a professor such as residence in a college town atmosphere, access to the performing arts, exposure to a climate and topography, proximity to friends and relatives, contact with congenial colleagues, and the establishment of a way of life and living.

From Table 1, where they rank between 10 and 16 in a list of 17 possible determinants, it is seen that environmental influences are rarely the determining factors in job choice. When asked "How important was each of the following factors in your decision to choose your current job instead of your next best alternative?", the environmental factors are frequently rated as "not important": 58% for "nearness to friends and relatives," 56% for climate, 49% for "nearness to graduate school," 28% for "congeniality of colleagues," and 25% for "cultural opportunities." Only "opportunities for outside income," "fringe benefits," and "academic rank" are more frequently listed as irrelevant in the job choice decision.

Moreover, when faced with a decision between their two best job options, over one-fourth of the professors choose the less desirable evnironment. That is, over one-fourth of the professors accept the job that is farther away from friends and relatives (34%) and graduate school (26%), in a less desirable climate (27%), or where culture is less accessible (26%). More than any other of the seventeen factors, professors are willing to sacrifice environment in order to attain the other advantages of a given job.[2] See Table 2.

The role that environmental factors play in job choice is a complicated one. Because academic jobs are of the "variable location" specie,[3] college teachers have the opportunity to teach in many different types of environments. They are forced

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[2] This statement is true only for the four factors mentioned in the previous sentence. It is not true for the environmental factor, congeniality.

[3] There are three types of occupations: constant location, locationless, and variable location. A man in a "constant location" occupation will find so many different job options within commuting distance that it will not be necessary for him to move, even if he is not satisfied with his particular job. Material handlers and typists would be examples of this occupational type. "Locationless" occupations are ones where a man is "on the road" so much that the location of his home is almost irrelevant. He could live in many different locations

(continued on page 278)

Table 2. Current Job Versus the Next Best Alternative, as Rated by the Individual

CHOICE VARIABLE	JOB ACCEPTED BETTER	TWO JOBS SAME	JOB REJECTED BETTER
Courses taught	52%	31%	16%
Teaching load	48	33	19
Research facilities & opportunities	50	25	25
Competency of colleagues	51	30	19
Salary	54	25	21
Future salary prospects	58	27	15
Reputation of school	51	23	26
Quality of students	45	30	25
Administration & administrators	50	32	18
Cultural opportunities	49	25	26
Congeniality of colleagues	46	40	14
Academic rank	41	41	18
Fringe benefits	40	38	22
Nearness to graduate school	40	34	26
Climate	36	37	27
Nearness to friends & relatives	38	28	34
Moonlighting opportunities	35	43	22

Source: Survey data.
Rows equal 100%.

to decide upon one of them. Yet, a majority of the professors avoid making this decision. They choose their jobs on other factors and accept the environment that goes with the job that is otherwise best. Although their failure to place exclusive stress upon monetary factors in job choice affords the freedom to allow environment to influence job choice, college teachers prefer to use this freedom to discriminate on the non-monetary characteristics of the job itself and not to selectively eliminate jobs on the basis of environment. College teachers regard environment as important and would like to consider it in their job choice. But there are other factors, such as the courses to be taught and the reputation of the school, that are regarded as even more important. If these other features are to be gained, something must be sacrificed and that something is often environment. When a final decision must be made between a job offering a desirable environment and an undesirable workload and, on the other hand, a job offering an undesirable environment and a desirable workload, the latter is usually chosen.[4]

There are, however, subsets of teachers for whom certain environmental factors are a more significant element in job choice. For example, the availability of cultural opportunities is particularly important to professors in the fine arts, as illustrated by the contrast between economics, physics and music in Table 3. In the laboratory sciences where team research is more frequent, the congeniality of colleagues receives greater stress. Emerging students, especially those who have not yet

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equally well, and still receive his paycheck from the same source. Travelling salesmen and military personnel typify this second group. The "variable location" occupations are such that when a man wants to switch jobs it is necessary for him to move geographically but when he is at a particular job his geographic location is fixed. In these occupations, persons are often specialized to the extent that there are very few job opportunities within a given area but the nature of the work is such that it requires a man to live "on location" and does not require a great deal of travelling. It is for persons in this last occupational group that we would expect environmental and locational factors to be most influential in job choice. Since academic jobs are definitely within this last category (the geographic mobility noted in early chapters indicates that academic jobs are of the variable location type), we would expect environment to be a major determinant of job choice.

[4] The above statement of significance of environment in job choice, although it is consistent with both the a priori arguments and the empirical findings of the current study, is a considerable modification of the statements based upon the pilot study alone (The Market for College Teachers, pp. 185-192). The pilot study suggested that environment is more important in job choice. The main reason for the necessity of the modification is that in the pilot study the environmental factor was consolidated in one variable, "location." Whereas in the nationwide survey, five different environmental factors are considered. The difficulty here is that "location" is more than the sum of the five parts. Although the proximity of culture, friends, and graduate schools as well as the congeniality of colleagues and the desirability of climate make up a portion of the desirability of a given "location," there are also other influences such as the "way of life" and the "culture of the region" that are not included in the five specific factors. In the current survey the influence of five particular aspects of location is

completed their degrees, recognize the importance of remaining relatively near their graduate schools so that consulation with their thesis advisers is more feasible. Similarly, researcher-scholars, even when they are not actually teaching at a major university, feel a need to be near the libraries and other research facilities that only graduate schools are sure to have. For the married women professors, who are constrained in the jobs they may accept to the commuting radius of their husband's employment, evnironment weighs heavily in decisions.

Taken together, evvironmental influences are considered more heavily by the less prestigious, non-publishing, teaching scholars. This might be expected because this same group of college teachers would have less need to stress factors such as research facilities and would therefore have the flexibility to choose among jobs on the basis of environment. Even for this group, however, with few exceptions, the rates at which environmental attractiveness will be sacrificed for other job characteristics are quite high. The importance of environment in job choosing is, as a rule, relatively small. Environmental factors may be expected to determine job choice only when two jobs are almost equal in most other respects.

Job-Related Factors. Turning from the least important group of job choice variables to the most important, let us consider job-related factors. The most salient features of the job itself and the ones that were singled out for special study are the following: the courses taught, the teaching load, research facilities and opportunities, competency of colleagues, reputation of the school, the quality of the students, and the nature of the administration and administrators. That all seven of these factors are among the top nine listed according to the Choice Index in Table 1 indicates that they are the prime determinants of job choice. When considered individually, and especially when considered together, these factors provide the main rationale for job choice. Since each one of the factors is significant in job choice, it is desirable to define separate functional relationships.

(1) Courses taught. More than any other single factor, college teachers consider competitive job offers in terms of the courses they will be required to teach (Table 1). This is the most important determinant of job choice for virtually all professors--the New Englander and the Westerner, men and women, young and middle-aged. last year's students as well as last year's professors.(Table 3). Job offers that promise evenly slightly more attractive teaching assignments are rarely rejected (Table 2).[5]

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assessed in greater detail, but the total or aggregate influence of location is not studied.

Information presented in Chapter 8 on balkanization by discipline suggests that professors do not even seek offers of jobs that are outside their general area of specialty. For example, the political scientist does not consider jobs in sociology. Thus, there is a minimum desirability of the teaching assignment that is required of all jobs options before they receive serious consideration.[6] Even beyond this minimum level, the "courses taught" continues to be of prime importance in job choice.

(2) Teaching load. Like courses taught, the number of hours of classroom teaching that is required of various jobs is influential in job choice decisions for almost all groups of professors (Table 1 and 3). Fewer hours are generally preferred so that time is freed to make independent decisions about whether more time will be spent with students or on research. In a surprisingly large number of instances, differences in teaching loads provide a basis on which competitive job offers may be discriminated. Even after professors have narrowed the field to their two best job options, two-thirds of them are considering offers with different "loads." When loads differ, over 70% choose the option with the lower number of hours (Table 2).

(3) Research facilities. For many professors the complementary inputs offered by competitive job options is a decisive factor. Of special concern to professors who spend more time researching than teaching is the availability of adequate research facilities. The laboratory scientists are concerned

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5. No attempt was made to specify what the characteristics of the most desirable teaching assignment are. Other studies emphasize the preference toward graduate level courses, courses within a man's special area of interest, and the avoidance of too many different and remotely related assignments. Cf., John E. Stecklein and Ruth E. Eckert, An Exploratory Study of Factors Influencing Choice of College Teaching as a Career (Washington: U.S.O.E., G.P.O., 1961), p. 31; John E. Stecklein and Robert L. Lathrop, Faculty Attraction and Retention: Factors Affecting Faculty Mobility at the University of Minnesota (Minn.: Bureau of Institutional Research, University of Minnesota, 1960), pp. 16-17; and my The Market for College Teachers, pp. 196-200. The preference for specialized assignments presents a real recruiting problem for the small colleges who often must expand their course offerings (not always desirably so) in order to make their jobs more attractive to the men they want. Cf., Earl McGrath, Memo to a College Faculty Member (New York: Teachers' College, Columbia University, 1961), pp. 16-17.

[6] The "minimum level" is probably higher for research-oriented professors because, as our data show, they tend to be more specialized in their teaching interests.

about the availability of expensive equipment needed for their experiments and the social scientists and humanists recognize the importance of library facilities. For the Ph.D. scholar, the big publishers, the academic scientists, and the professors who locate at large and prestigious IHE's--the availability of research facilities is more important than any other single factor (Table 3). The significance of this same factor in the decisions of teaching-oriented, non-publishers who locate at small, church-related, lower prestige institutions contrasts sharply.

(4) Competency of colleagues. Ranking within the top four factors considered important in job choice by all professors, the competency of colleagues is of special concern to individuals in the "cooperative" disciplines such as physics and music and to young professors who hope to learn from their senior colleagues (Tables 1 and 3).

(5) The quality of students, a third complementary input, is of most concern to the professors locating in small, church-related, high quality IHE's. In contrast, many of the professors moving to large, public IHE's express some willingness to sacrifice the quality of the teaching products in order to concentrate more of their effort upon research (Tables 2 and 3).

(6) The reputation of an IHE can be a significant factor in faculty attraction, especially for the better schools. Among the professors who locate at the best schools, stature and reputation is rated as the second most important determinant of job choice (Table 3). The researcher-publishers, especially the younger ones who are more prone to consider what others think of the jobs they accept because of the implications for mobility, tend to be more concerned about reputation than the teaching-oriented scholars who often locate at the smaller, church-related schools

(7) The outlook and competency of administrations and administrators tends to be significantly more important in the job choices of individuals choosing between two lower eschelon IHE's. This factor is third ranked in importance for individuals locating in the bottom 20% of schools, compared to 13th for the top-rated IHE's. The factor is rated as significantly more important by older professors and by persons locating at the smaller, church-related schools. Evidently, it is at these schools where there are the greatest dangers that the independence that professors cherish is most likely to be violated.

Compensation factors. The tangible rewards connected with job options are defined by the salary, fringe benefits (e.g., retirement, insurance), academic rank, opportunities for outside income (e.g., summer school teaching), and future salary prospects. In the academic labor market, with the exception of fringe benefits, the terms of employment tend to be set for each individual in separate negotiation sessions. Although there are disciplinary, rank, and other contours--the terms of employment tend to be uniquely set for each heterogeneous element of supply.

Even for the same individual, there is often substantial variation in the incomes offered by different jobs.[7] Over one-third of the professors receiving more than one concrete offer consider (and reject) college teaching jobs offering at least $500 less per year in annual income and over one-third consider jobs offering at least $500 more income.[8] In many cases, the differentials are much larger: at least 13% receive offers of $1000 or more above the ones they accpeted.

In spite of these differentials, salary and income are not the most important elements in job choice. Overall, salary ranks only fifth according to the choice index (Table 1). Twelve percent of the professors with two or more offers reject a job paying $1000 more. When considering their two best job options, 21% choose not to accept the offer carrying the better pay (Table 2).

As a rule with exceptions, the relationship between the importance of salary in job choice and the level of salary is inverse. Individuals with low salaries place more stress upon this factor in job choice: for example, the music professors more than the physics professors, the lower eschelon schools in contrast to the top 20%, and professors in the Southeast more than those in other regions.

The evidence of the present study tends to verify the theory put forward in the pilot study that salary is an important factor up to a point but beyond that the incremental changes in net advantage tend to be relatively small.[9] Two modifications are appropriate, however. In the pilot study it was hypothesized that professors virtually never move to a job with lower monetary rewards. This is not exactly the case. Although 57% of the professors moving between two teaching positions increase their income by the move, 23% actually take a pay cut. Small cuts in income are acceptable, although less than 1% lose more than $500 by the move.[10]

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[7] Income refers to the regular academic salary plus consulting and income from part-time jobs. It excludes dividends, interest, gifts, royalties, and the sale of manuscripts because these items would tend to be the same at all jobs.

[8] These statistics do not include non-teaching jobs.

[9] The Market for College Teachers, pp. 181-185.

[10] This suggests that the minimum factor theory developed in the pilot study still applies but that the minimum level is approximately $500 below current salary.

Table 2. Importance of Determinants of Job Choice Ranked by Selected Groups

CHOICE VARIABLE	ORIENTATION		PUBLICATIONS:		EDUCATION:	
	RE-SEARCH	TEACH-ING	NONE	MANY	PHD	NON-PHD
Courses taught	4	1	1	2	2	1
Teaching load	2	2	2	3	3	2
Research facilities	1	4	5	1	1	8
Competency of colleagues	3	3	3	4	4	6
Salary	6	5	4	5	5	5
Future salary prospects	8	6	6	8	7	3
Reputation of school	5	9	7	6	8	10
Quality of students	7	10	10	9	10	7
Administration	12	7	9	7	6	4
Cultural opportunities	11	11	11	13	12	9
Congeniality of colleagues	13	8	8	11	11	11
Academic rank	10	12	13	10	9	13
Fringe benefits	16	14	15	14	14	14
Near graduate school	9	13	12	12	13	12
Climate	14	16	16	15	16	17
Near friends & relatives	17	15	14	17	15	16
Moonlighting opportunities	15	17	17	16	17	15

Source: Survey data and Quality Index.

*/Ranks represent the vertical placing of the percentage rating factor as "very important" taken over the base of all "very important" reasons. The measure is closely related to the Choice Index. The dashed connecting lines are inserted to emphasize rank differences of three or more.

ACTIVITY LAST YEAR:		CONTROL OF CURRENT SCHOOL:			REGION OF CURRENT IHE:				AGE:			SEX & MARITAL STATUS: MARRIED		SIZE OF CURRENT IHE:		
STU-DENT	PRO-FES-SOR	PUB-LIC	PRI-VATE*	CHURCH RELATED	NA	GL	SE	W	35 OR LESS	36 50	51 OR MORE	M	F	S	M	L
1	1	1	1	1	1	1	1	1	1	1	2	1	1	1	1	2
2	2	3	5	2	3	2	4	3	3	3	4	3	2	2	2	4
4	3	2----	2------	6	2--	5--	5-	2	2	2	3	2---	5	7--	4--	1
3----	6	4-----	3------	8	4	4	3	4	4	6	7	4	4	8--	5--	3
7----	4	6	7	7	6--	7--	2-	6	5	7	3	6---	9	10--	3--	6
8-----	5	5----	13------	5	8	10	7	5	7	5	9	5--	14	5	6	7
5-----	8	7-----	4-----	11	5	6	9	7	6	8	8	7--	10	6--	9--	5
10	9	12-----	6------	3	7	11	11	9	8	12	10	9	8	3-	10-	11
11-----	7	8----	10-------	4	10	8	5	8	10----	4----	1	8	7	4--	7-	12
12	12	11	8	10	9-	12-	12-	12	12	11	12	13---	6	12	11	10
6---	11	9	9	9	11	9	8	11	9--	10---	5	10	11	9	8	8
13---	10	13	11	12	12--	3-	10-	14	13	9	11	12	12	11	13	13
15	14	14	14	14	14	14	13	16	15	14	13	14	15	15	14	14
9---	13	10	12	13	13	12	14	13	11	13	15	11	13	12--	9--	9
16	16	16	16	17	16-	17-	16-	10	16	15	16	16	16	16	16	16
14	15	15	15	15	15	15	15	15	14	16	14	15---	3	14	15	15
17	17	17	17	16	17	16	17	17	17	17	17	17	17	17	17	17

(Table 3 continued)

CHOICE VARIABLE	MILES MOVED:		PERMANENCY:		DISCIPLINES:			QUALITY OF IHE:	
	LESS THAN 200	OVER 1000	ONE YEAR ONLY	MORE THAN 1 YEAR	MUSIC	ECO-NOM-ICS	PHYS-ICS	TOP 20%	BOTTOM 20%
Courses taught	1	2	1	1	1-----	1----	4	4----	1
Teaching load	2	3	3	3	10-----	4----	3	5	5
Research facilities	3	1	4	5	8-----	3----	1	1----	7
Competency of colleagues	4	4	2	4	3-----	7----	2	3----	6
Salary	6	5	6-----	2	4-----	2---	10	6	4
Future salary prospects	5-----	8	7	7	6-----	5---	11	9----	2
Reputation of school	7	6	5	6	7	6	6	2---	12
Quality of students	8	7	10	9	9	8	8	7---	11
Administration	9	10	9	11	5-----	11---	13	13----	3
Cultural opportunities	11	12	11	12	2-----	14---	12	12	10
Congeniality of colleagues	10	9	12-----	8	13-----	12----	7	11----	8
Academic rank	12	13	13	13	12	10	9	10	9
Fringe benefits	14	15	14	14	11----	13---	16	14	13
Near graduate school	13	11	8	10	15-----	9----	5	8---	14
Climate	17	16	16	15	17	15	15	16	16
Near friends & relatives	15	14	15	16	16	17	14	15	15
Moonlighting opportunities	16	17	17	17	14	16	17	17	17

The second modification relates to the significance of very high salaries. The present evidence suggests that the lure of money never diminishes to zero: the services of most professors will be sold to "any" IHE if the price paid is sufficiently high.

Admitting that salary differentials of the magnitude typical of today's market are rarely influential in job choice decisions, an attempt was made to learn if much higher salary differences might have been influential. The fact that increasing salaries by magnitudes of $25,000, $10,000, and even $2,000 is, for most schools, completely infeasible was ignored. To measure the extent to which money might redirect mobility, last year's college teachers who rated their previous jobs as "my old job was unacceptable and I had a strong desire to move" were asked "Approximately how much higher (than the amount actually offered) would your annual income had to have been in order to induce you to stay at your previous job?" Thus, the only persons answering the question were those who had a strong desire to leave their old jobs. Yet, 95% of them would have stayed if only their salary had been increased sufficiently. Only 5% said that it would take more than a $25,000 increase to keep them (Table 4).

Table 4. Dollar Income Increase Necessary to Keep Professors at Unacceptable Jobs *

AMOUNT	PERCENTAGE
$0-$499	11%
$500-$999	14
$1000-$1999	25
$2000-$4999	26
$10,000-$24,999	8
More than $25,000	5

Source: Survey data.
*/ 11% did not answer.

Thus, although small salary differentials are often not influential in job choice, large ones could be. Except at the lower salary levels, each dollar increase in salary contributes only a small amount to net advantage--but if there are a sufficiently large number of dollar increases, the monetary differential may well determine the direction of mobility. Salary could be more important in influencing the direction of mobility if employers were willing to exceed traditional salary range limits.

From the data it is apparent that the salary that influences job choice is long-run more than short-run. The choice indexes for "salary" and "future salary prospects" are identical, suggesting that respondents tend to think of salary and salary prospects in the same terms. Not only were the choice indexes the same--but so also are the groups that tend to stress salary on the one hand and future salary on the other. Though there are some differences among one year appointees versus others and between age groups, the general similarities suggest that professors are long-run rather than short-run men.

Neither of the other two aspects of compensation--fringe benefits and opportunities for outside income--have a great deal of influence upon job choice, even when only selected sub-groups are studied (Tables 1 and 3).[11] In fact, "opportunities for moonlighting" is consistently rated as the least important of 17 factors.

Nor is academic rank very important. Among the 17 factors rated by the choice index, academic rank is only 12th most important. There is amazingly little resistance to accepting decreases in rank, as shown by the fact that over 25% of professors moving between two teaching jobs actually accept a lower rank.

THE RELIABILITY OF THE CHOICE INDEX MEASURE

Words and actions. Any statement about motivations for job choice which is based upon the post hoc reflections of the choosers is immediately suspect, and rightly so. There are at least two sources of error in information collected by these means. First, the choosers may not know themselves why they chose the job they did and may answer most anything to avoid the embarrassment of admitting that they do not know. Or, secondly, they may know but be unwilling to admit that they did not follow a rational or an "acceptable" pattern. They may know, for example, that salary was crucial in their decision but hide the fact so that the monastic image of the college teaching profession may be preserved.

To assess the extent to which the response on which the index is based is unreliable, words and actions were compared. If a man said that "research facilities" were "very important" in job choice, we checked to see if he actually moved to the job with better "research facilities." An index of comparative merit of the job accepted and the next best alternative (the Merit Index) was computed from the answer to the question: "Compare your current job with the one which you would probably be working at had you not obtained this one."12 The options "much better," "slightly better," "about the same," "slightly worse," and "much worse" were weighted as 5, 4, 3, 2, and 1 (respectively) in order to obtain an overall index. The Merit Index values were then ranked over the 17 variables.13 Correlating these ranks with the ranks of the Choice Index (as ordered in Table 1), a high relationship is seen (Spearman's = .89), an indication that the jobs chosen are most often better in the factors that individuals rate as more influential.14 This test tended to strengthen our confidence in the Choice Index measure.

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11. Fringe benefits are discussed in more detail on pages 73-75.

12. This question was answered only by persons whose next best alternative was another college teaching position.

13. By asking the individuals themselves to rank the comparative merits of the two jobs considered most seriously, many thorny problems of interpersonal comparisons and of rating the comparative merits of two jobs could be avoided. Each individual could decide, for example, whether he preferred Fort Lauderdale to San Francisco. We did not have to decide for him. Moreover, it was possible for one individual to prefer the East whereas another the West.

14. The actual differences in ranks (Choice Index Rank minus Merit Index Rank) are:

Courses taught	-1	Future salary prospects	5	Academic rank	0
Teaching load	-1	Quality of school	-2	Fringe benefits	-1
Research fac.	-5	Quality of students	-2	Nearness to graduate school	1
Competency	0	Administration	3	Climate	0
Salary	0	Cultural opportunities	-1	Nearness to friends	-1
		Congeniality of colleagues	4	Moonlighting opportunities	1

Note that the largest variations between actions and words occur with respect to the factors hardest to rate before actually taking the job. When they answered our questionnaire, some months after serving on their new jobs, the newly hired professors were able to rate with some accuracy the relative merits of their present jobs versus their next best alternatives. They state that their colleagues are more congenial, the future prospects for salary increases are greater, and the administration-administrators are superior. These same factors, however, are not

Limitation of measure. The major limitation of the Choice Index as a measure of the importance of different variables in job choice is not that it inadequately describes why the best job offer is chosen instead of the second best one. It considers only this one decison, and no others. Prior to the "finals" there are usually many choices made: for example, to follow up job A rather than B, to eliminate job C because it is in an undesirable climate, not to seek information about jobs at D because it is not a church-related school. The criteria used to make these decisions, though they may be much the same as those used in the "finals," may be quite different. In short, the present discussion of the choice process does not define the minimal characteristics necessary in a job.

Secondly, the choice index rates the importance of factors "actually considered," not those "desired to be considered." It may be that in a substantial number of instances individuals would have liked to base their decisions upon other factors--but neither the best nor the second best job offer promised as much of the factor as would have been desired. For example, a professor might reply, when asked why he accepted the job at Siberia College rather than Outer Mongolia College, that the decision was made on the basis of the courses to be taught at the two schools. In his answer he does not indicate that he would have preferred to make the decision on the basis of the prestige of the institutions but was unable to do so because neither school offered any. In short, the choice index measures the importance of factors when choosing between two real world alternatives, not the factors desired in a dream job.

Finally, the choice index is limited because it considers only reasons for job choice and ignores reasons for job switch. The choice index rates the importance of factors when deciding among two competitive offers; it does not consider the factors stressed when deciding whether or not to leave a previously held job.[15]

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so influential in the actual choice process because they cannot be accurately estimated before the fact. The data are consistent with the interpretation that at the point that the choice decision had to be made these factors would have been more important if they could have been more definite.

Evidently, the advance rateability of research facilities has exactly the opposite effect upon the decision-making process. Since research facilities can be assessed accurately before taking a job, even small differences are influential in the decision-making process.

[15] Unless the previously held job is the next best alternative.

To compensate for these shortcomings of the choice index, it is desirable to extend the discussion.

The minimally acceptable job. To determine the factors that make jobs unacceptable, we asked the persons who left their last college teaching position because it was "unacceptable and they had a strong desire to move" to check the one or two most important reasons for their wanting to leave. The list of options, and the distribution of checks, is given in Table 5.

Table 5. Reasons for Leaving Unacceptable Jobs

REASON	PERCENTAGE CHECKING*
Administration & administrators not competent	35%
Research facilities & opportunities poor	16
Teaching hours excessive	16
Salary too low	15
Courses assigned undesirable	14
Advancements prospects in academic rank poor	13
Colleagues not competent	12
Colleagues not congenial	9
Reputation of school among scholars poor	7
Quality of students poor	7
Future salary prospects poor	6
Cultural opportunities poor	6
Climate undesirable	6
Fringe benefits poor	3
Friends and relatives too far away	0
Opportunities for outside income poor	0

Source: Survey data.
*/Percentages exceed 100 because one individual could check two factors.

Four of the first five factors in the list are the same as the five most important factors according to the choice index. The courses to be taught, teaching load required, research facilities offered, and salary paid are factors taken into consideration at all stages of the choice-making process. Not only are they important determinants when choosing between the two best job options but they are also important factors in determining the most marginally acceptable (and unacceptable) jobs. These four factors not only provide the basis for decision making in the final round, but also in the preliminary stages.

Similarly, environmental factors such as nearness to friends and relatives, cultural opportunities, and climate--factors which are rarely determinative at the final stages of choice making--tend to be equally insignificant when determining criteria for the minimally acceptable job. Likewise, fringe benefits and opportunities for outside income are equally inconsequential at both the beginning and the final stages of decision making.

In fact, the lists in Tables 1 and 5 are very much the same throughout, except for one factor, administrators and administration. Only ninth in importance in the final stages of decision making, the attitudes and abilities of top management are by far the most important element in defining the minimally acceptable job. This factor is mentioned by more than one third of all professors leaving jobs that they rate as unacceptable and is mentioned more than twice as frequently as any other single factor.

The implications are clear. Though professors will consider jobs where the teaching hours are excessive, the salaries are low, and so forth--they will not give a second thought to job opportunities where the administrators are viewed as incompetent, misdirected, or improperly constrained. It is at the very beginning stages of the decision-making process that the professorial insistence upon independence of action and academic freedom is effected. The conviction that every college teacher must have the freedom to decide how and what he teaches and researches is so strongly imbedded in the professorial psyche that the right of independence of action is the primary determinant of job choice. This one factor is so important that jobs that do not promise independence are eliminated without further consideration. Academic freedom is a minimum requirement for all jobs.

It is most deceptive to conclude on the basis of the job choice index that the attitude and ability of administrators is the ninth most important factor in job choice. In fact, it is the most important. It is so important that virtually all jobs that do not offer acceptable top management never reach the "finals."

Thus, though most factors important in separating acceptable jobs from unacceptable ones are the same as those dividing the best job from the next best one, the one major exception is "administrators and administration," a factor which plays such a dominant role in the beginning stages of decision making that there is no role left for it to play in the final stages.

The ideal job: El Dorado. To compensate for another limitation of the choice index rating an attempt was made to identify the factors present in ideal jobs by asking "If you could teach at any school in the United States, where would you like to teach most?" By analyzing the prestige, the size, and other characteristics of the IHE's listed, a vision of the ideal job can be developed.

Unfortunately, the picture of the "ideal" job cannot be as complete as that of the minimally acceptable one. Sole reliance must be placed upon the information available from knowledge of only the name of the school (e.g., location, quality, control, highest degree offered, and size). Although these general characteristics will allow a limited number of inferences about the importance of other factors (e.g., at the larger schools teaching loads tend to be lower), it is impossible to judge job characteristics that depend upon individual situations such as salary, rank, and nearness to friends and relatives. Even so, an analysis of the ideal job can provide a valuable supplement to the job choice index rating of factors.

Professors, in response to the "El Dorado" question, tended to identify three distinct sets of institutions: (a) their present employers (20%), (b) an alma mater (25%), or (c) a large, northeastern (or western), public (or non-denominational private), first quality university.16 The salient characteristics of the institutions chosen by the 55% who chose an IHE other than an alma mater or their current employer are summarized in Table 6. Separating out which characteristics of these IHE's most attract individuals is extremely difficult, for the large institutions which have the advantage in prestige and in research facilities, also have better than average student bodies and more attractive teaching assignments. Strong multicollinearities exist.

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16. Because special factors undoubtedly influence the selection of IHE's of previous attendance and present employment, the subsequent discussion is based upon only that 55% of all El Dorado's with which individuals have no obvious connection. Before leaving behind the group of professors who identified their current jobs as their El Dorado's, it is pertinent to mention one piece of evidence that reaffirms the conclusion of the earlier section, "words and actions." In this section, evidence was presented to show that professors tend to choose the job offers that promise more of the very variables that they rate as most important. Spearman's rank correlation coefficient run between the Choice Index and the Merit Index was .89. This same test, when run on that group of professors who have just moved to their El Dorado, yields a slightly higher correlation coefficient, an indication that when an individual actually has the option of choosing his "ideal job" his actions are even more in conformity with his words.

Table 6. Characteristics of El Dorado's Other Than Institutions of Current Employment or of Previous Attendance*

CHARACTERISTIC	PERCENTAGE (GROUPS = 100%)
Control	Public 48%, Private Non-denominational 40%, Protestant 9%, Roman Catholic 3%
Quality	Top 20%--51%, 20% to 40%--16%, 40% to 60%--15% 60% to 100%--17%
Size	Over 5000 students--63%, 1000 to 5000 students --27%, under 1000 students--10%
Level	University 73%, College 24%, Junior College 3%
Location	North Atlantic 33%, Great Lakes and Plains 21% Southeast 13%, West and Southwest 33%

Source: Survey data and the Quality Index (explained in the Appendix).

*/The El Dorado school is that given in response to the question: "If you could teach at any school in the United States, where would you like to teach most?"

The size of the institution, for example, can indicate a host of conclusions about the ideal position. Size is a reliable estimate of research possibilities. Economies of scale, whereby several faculty members use the same facilities without getting in each other's way, and the generally large budgets of the big schools enable them to supply their faculties with better laboratories and larger libraries. Larger departments allow more specialization and greater cross fertilization of research ideas among department members. It may be possible to give examples of large schools with minimal research facilities and small schools with excellent ones, but such examples are exceptions. That almost all of the research-minded college teachers are currently locating in the larger schools and envision the larger schools as El Dorado is another indication of the positive relationship between size and research opportunities.[17]

The larger schools, with some exceptions, offer graduate degrees. This is important because certain prerequisites, making teaching positions more desirable, are usually paired with graduate level teaching. In addition to better research facilities and opportunities, these include graduate student proteges, lower teaching loads, and more prestige. For comparably qualified individuals, the weighted average of hours of teaching required is nine at the university level and twelve in the 4-year college.

The link between "prestige" and the "presence of a graduate school" is less measurable but nevertheless significant. For the teaching-oriented professor, the presence of a graduate school often means better students and greater challenges. To the research-oriented professor, the graduate school situation offers greater possibilities for publishing, greater potential for research grants,[18] and superior facilities to carry out research projects.

Academic freedom is a dear and precious quantity to the teaching profession.[19] For virtually all prospective faculty members it is an essential characteristic of all jobs considered. As a rule with notable and tragic exceptions, faculty at the larger IHE's, especially the ones which are privately financed and beyond the control of a religious sect, are less bound by constraints placed upon the ideas and issues aired in higher education settings. The greatest number of problems about academic freedom arise in the public institutions of conservative states and privately financed, denominationally related schools where misguided outsiders, failing to understand the meaning and method of liberal education, regard sponsorship as a license to maintain the school as their private preserve for propaganda dissemination and one-sided "education."[20] These same schools,

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17. Of all newly hired professors who state that they spend more time researching than teaching, 60% are currently located in large schools (students bodies over 5,000) and 76% envision their ideal jobs in a large school. The comparable percentages for those who spend more time teaching are 31% and 59%

18. In 1953-54, 14 large universities received 55% of all Federal research funds supplied to colleges and universities, and a substantial majority of the 173 remaining institutions of higher education that received funds offered graduate degrees. Charles V. Kidd, American Universities and Federal Research (Cambridge, Mass.: The Belknap Press of Harvard Univ. Press, 1959), p. 54.

19. Paul F. Lazarsfeld and Wagner Theilens, Jr. The Academic Mind (Glencoe, Ill.: The Free Press, 1958).

20. An analysis of the "censured administrations" listed by the American Association of University Professors (AAUP Bulletin, December, 1964, p. 310) shows that of the 17 IHE's listed--eight of the eleven public schools are in the conservative Southeast and Texas and only two of the schools are non-denominational and private. The University of Illinois, which

limited by the inadequate financing, are rarely large. Accordingly, of all the El Dorado institutions, 47% are under non-denominational private control and another 39% are under public control in a non-Southeastern state. Less than 50% of all institutions, these more loosely controlled schools account for a total of 87% of all El Dorado choices. When an individual chooses his El Dorado from the more tightly controlled categories of schools, he overwhelmingly chooses a school under the control of his own religion or denomination.

SUMMARY

From all of these attempts to ascertain the determinants of job choice, a reasonably accurate vision of the choice-making process evolves. Setting the standards by which individual jobs are judged are the background influences, especially the schools attended. Although some individuals are more deeply impressed by the attitudes and objectives of their undergraduate alma maters, the average college teacher becomes indoctrinated to the belief that the best teaching jobs are in large, prestigious, universities--probably while in graduate school. For many, however, this ideal is not realistic. They must choose among the jobs that are actually offered to them.

The first criterion on which choices are made is the attitude and ability of the IHE's top management. Job offers that fail to offer independence of action and competent leadership are usually rejected at the very beginning stages of the search-choice procedure. As the field of job options narrows to the two best, the decision to accept one offer and reject the other is usually based upon the characteristics of the job itself--especially the courses to be taught, the teaching load, and the competency of the colleagues. Environmental factors such as the availability of cultural opportunities and climate play an insignificant role. Although large salary differentials influence the direction of mobility, especially when one of the salaries considered are quite low in terms of the average earnings of academicians, this factor is rarely the primary determinant of job choice. Other aspects of compensation such as opportunities for outside income, rank, and fringe benefits rarely influence decisions in the final stages of choice-making. Professors appear to be most concerned about what, how, and how much they work. Of less concern are where and under what terms.

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is conspicuously atypical of the list, is the only institution on the list that was cited as an El Dorado.

TOWARD A WAGE THEORY FOR PROFESSIONAL WORKERS......CHAPTER 20

The existing theories of factor markets, as set forth in the writings of men such as Smith, Pigou, Hicks, Rothschild, Reynolds, Ross and Cartter, have been developed with the blue collar worker. Our detailed examination of a different type of market affords a good opportunity to clarify the meaning of some of the previously developed theory, to judge the generality of the theory and to examine its relevance for non-blue collar worker labor markets, and to suggest possible extensions and revisions. It is to this purpose that the current chapter is addressed.

Throughout we shall try to avoid setting up the badly beaten marginal productivity theory and knocking it down once again. This controversy has already been thoroughly aired and has been reduced to the "believers" who define "marginal" and "productivity" in broad and abstract terms and the "skeptics" who insist that a theory based upon such broad and nebulous concepts has little meaning and that a relevant theory, one which is founded upon more precisely defined and measurable concepts, is needed. Accepting without reproving both the assertions that it is meaningful to have a generalized abstract model of labor markets and that the most generally accepted model of this type, the marginal productivity theory, has only limited empirical applicability to real world labor markets, we shall concentrate upon moving toward a general theory that is empirically applicable. Particular attention is devoted to judging the relevance for the markets of professional workers of the modifications already presented for blue collar markets.

After considering the meaning of the concepts "net advantage" and "units of labor" which usually appear on the y- and x-axes in the diagramatic presentation of the labor market, the prior problem of delimiting the boundaries of "a labor market" is discussed. Then attention is directed toward specifying the meaning of the supply and demand concepts in the context of a market for professional workers. Next, the meaning of equilibrium and the processes by which it is realized are considered. And finally, a set theory statement of labor markets, developed by Tom Weiss, is presented in an appendix.

THE CONCEPT OF NET ADVANTAGE

A narrowly defined concept of job attractiveness has no place in a wage and employment theory that is relevant for professional workers. Monetary remuneration, even when broadly interpreted to include fringe benefits and opportunities for outside income and prospects for future salary advancement, is neither the sole nor the most important determinant of job attractiveness. The utility received from professional work is not confined to the satisfaction received from consuming goods purchased with the paycheck. Utility is derived from the work itself. To the extent that a job involves tasks that are more useful, appreciated, relevant, prestigious, and pleasant--as well as more remunerative--the job is more highly valued.

The function defining "net advantage" is more complex than $Y = f_1\ (X_1)$, where Y is net advantage and X_1 is monetary compensation. In fact, $Y = f_1\ (X_1) + f_2\ (X_2) + \ldots + f_n\ (X_n)$ where $X_2 \ldots X_n$ represent the non-monetary characteristics of the work itself and the hiring environment. Evidence collected on college teachers suggests that Y is postively valued even when $X_1 = 0$ (i.e., the professor receives no pay). This simply means that professors prefer work to unemployment. Casual empiricism suggests further than this type of preference structure is not unique to professors. Wealthy men, who could be satiated by material goods without working at all, often choose work in preference to leisure. Many professional men, without the prospect of greater monetary reward either in the short run or long, choose to work more than the minimum number of hours required by their employers. Still another example are the many hours of volunteer labor given by Community Chest workers, Heart Fund volunteers, and so forth.[1]

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[1] Some volunteer labor may be motivated by economic gain, even though the gain is not direct. For example, a doctor may

For the professional worker the idea that pay is necessary to offset the disutility generated by the performance of job duties needs to be revised. Many tasks have positive utility values. In these instances it may be more accurate to think of pay not as an offset to disutility but as a marginal element adding to the already positive utility of a job.

An adequate micro-employment theory must recognize not only that many elements influence net advantage but also that the influences differ in intensity and nature. The functional relationship between Y and X_i is unique. To illustrate differences in *intensity,* consider the two variables, academic rank and the courses to be taught, as they affect the desirability of teaching jobs. A change in the desirability of courses to be taught will typically have a much greater effect upon net advantage than a change in rank. To illustrate differences in the *nature* of relationships, consider the variables, salary and the availability of cultural opportunities. The evidence of the current study suggests that the trade off rate of salary for other desirable job elements is very high when salaries are low, diminishes as salary is higher, but never diminishes to zero. Always salary adds to net advantage, though as salary increments are added to an already high salary they are less significant. In the case of cultural opportunities, trade off rates are always small and quickly approach zero as the opportunities grow beyond the point where one individual can take advantage of all of them. These examples are given simply to indicate that in order to develop a complete theory of job choice it is necessary to specify the exact nature of the functional relationship between each choice-influencing variable and net advantage. When this is done, the values of the variables may be substituted into the equation cited above and a value for net advantage may be derived. Of course, the individual will select that job for which Y is the greatest. The individual will take the highest "price" offered for his services.

In the price-quantity calculus of labor markets, "net advantage" is the price and a "unit of labor" is the quantity. Now that the price variable has been examined, let us turn to quantity.

THE CONCEPT OF A "UNIT OF LABOR"

In professional labor markets defining a "unit of labor" is especially troublesome because of the wide dispersion in

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ask his wife to give her voluntary services in the hospital so as to meet his responsibilities to the community and to make more palatable the high rates he charges. An insurance man may become involved in various community service projects so that he may meet prospects and thereby increase sales.

individual ability and initiative. Workers are rarely homogeneous as the classical assumptions postulate, but professional workers are more heterogeneous than most. Whereas production workers are often paced by a machine, closely supervised by their superiors and given expected production norms, independence is characteristic of professional work. Successful production, as well as the failure to produce, is almost solely in the hands of the worker. His professional status implies that he is capable of self discipline and self supervision. He has the freedom to succeed magnificently or to fail drastically. The freedom means that there is a larger range of input quality. To assume, for example, that one college teacher's hour in the classroom or day in his laboratory is as productive as another's is erroneous. One can usually predict in advance that the ambitious, publishing, Stanford-Ph.D. will yield more output from a day's work than the senile, out-of-date scholar who has never taken the time and trouble to earn his Ph.D. How then is a "unit of labor" to be defined, if not by man days or manhours?

In spite of its inadequacies, the answer must be "in terms of output equivalents." A norm must be established: for example, the normal publication output of the average professor might be set at 2 journal articles (of a given quality) per year. A "unit of labor" may then be defined as a man who will produce two journal articles in a year. Thus, the ambitious publisher who writes four articles may be hired as two units of labor, whereas the senile non-doctorate may be only one-half unit of labor (if he publishes only one article per year). This simple solution has, however, several serious shortcomings. It assumes that output is immediate, homogeneous, and measurable.

In actual fact, a large part of the product of professional workers may be properly classified as "goods in process" at any point in time and is not immediate. The output of the publishing professor may be no articles one year and four the next, for example. This is not a major problem.

The lack of homogeneity of output is far more serious. For example, if the two articles per year norm is set, is the man who carries a zero teaching load and meets the norm conclusively more productive than the man who publishes only one article while teaching 12 hours? A related problem is that of measurability. Even with the publication criteria there are problems about what to do with joint authorships, what rates at which to convert books and monographs, how to judge original paintings, and how to compare the number of publications in fields where publication is relatively infrequent (e.g., home economics) with those where publication reaches voluminous proportions (e.g., pharmacology). But more than this, the publications criterion was hand-picked as one of the few quantitative measures of professional output. Most of the output of professionals is far less measurable: for example, the teaching output of college teachers.

It seems that by posing an output criterion for the measurement of input one set of problems is being exchanged for another.

Yet, the second set is perhaps more surmountable than the first. It any case, the measurement problem is one that must be overcome if current wage theories are to be applied meaningfully to professional worker markets.

THE CONCEPT OF "A LABOR MARKET"[2]

Extension of theorizing into the area of professional labor markets raises anew the many problems associated with delimiting the boundaries of "a labor market." The solution proffered by Reynolds and others in reference to the market for unskilled workers is not applicable. "A labor market" cannot be identified "with a locality small enough so that people can readily travel from homes in any part of the area to jobs in any other part"[3] when empirical evidence shows, as with college professors, that over 85% of the laborforce change their place of residence when they switch employers.

The boundaries of labor markets are determined by three factors: (1) the preferences of suppliers, (2) the preferences of demanders, and (3) technical considerations such as the cost of locating particular jobs or candidates. In the market for unskilled workers, the positive preferences of suppliers not to change residence, coupled with the general local availability of sufficiently productive labor and the cost of recruiting outside the local area, cause the labor market to be limited by geography. Even when properly trained labor is not available locally, it is often cheaper for the employer to accept the small expense of training an "unskilled" worker than to undergo the expense of recruiting an already trained worker from another locality.

In professional labor markets, however, the training option is not feasible. The low rates at which substitutes may be found for specialists causes employers to prefer to extend recruitment instead of training. At the same time, the suppliers, realizing that full use may be made of their accumulated skills. by a limited number of employers and desiring to obtain the best possible job, are more willing to consider job options that require relocation. In professional labor markets, skills, more than geography, determine market divisions. The markets are for sociologists, for historians, and for physicists--not for Boston professors, Chicago professors, and Alabama professors.

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[2] Mr. Tom Weiss of the University of North Carolina presents a very interesting model defining the academic labor market in terms of vector analysis. His model is included as the Appendix titled "Defining Labor Markets By Vector Analysis."

[3] Lloyd G. Reynolds, The Structure of Labor Markets, p. 41.

The extent of specialization and geographic breadth of market are inversely related. The tendency is for all markets to be of the same "size." That is, employers and candidates extend their searches until a given number of minimally acceptable options (e.g., three) are in view, the minimum being dictated by the need of the participants to be competitively equal. The unskilled worker locates this number of options, and more, locally. The college professor seeking a position as "Instructor of English in some college" can locate a sufficient number of options near by, especially if he is well qualified and there is a great likelihood that the employers he finds will want to hire him. The English professor who wants to specialize in teaching Shakespeare will find fewer job options in the same area and will expand his geographic horizons.

Another derivative of these "size" determinants are the "industrial" divisions within the academic world. Universities, colleges, and junior colleges differ in the compositions of their product outputs. A university is as interested in furthering knowledge itself as in educating its customers; a college emphasizes customer relations, but allows research and development; and a junior college is uniquely disinterested in basic research. Consequently, employees of these firms search for jobs among similar institutions, with the geographic boundaries being determined by the number of options within a region. Thus, because they are fewer universities in a given region these colleges, university-oriented faculty will have a more national market, while college-oriented faculty will be more regional.

There are other balkanizations, not so easily definable in economic terms, but nonetheless operative in determining markets. These arise from the preferences of supply for employment at a school of certain quality, controlled by certain groups, and educating certain types of students (as distinguished by factors such as sex, race and religion) and the preferences of demand for certain types of faculty and certain discipline ability, depending on the need for specialization; and by certain technical considerations. This last group includes the attraction of various regions, the ability to contact and recruit faculty, and the visibility of supply in its market participation.

All of these balkanizations--whether economically defined, psychically determined or technically limited--influence salary structure. The job clusters within each firm will be structured in accord with wage contours ranging throughout the market which are, in turn, determined primarily by relative excess demand and modified by certain segments of supply related to their national market as opposed to the local one.

The key rate, for both intra-market comparisons, and for the job clusters within an IHE is the hiring-in rate. This is the only rate that faces a substantial market. It is the lower ranking supply (assistant professors versus full professors) which is more willing to move, and it is at the beginning that

that ability to pay does not prevent schools from competing. Since the senior ranks do not compete as actively, the concern of any employer is merely competitively recruiting at the beginning, and retaining the once hired faculty by keeping them satisfied within the firm's salary structure.

THE CONCEPT OF LABOR DEMAND

The demand for professorial services is derived from the demand for the output of IHE's. Students must have teachers. Research must be directed. Thus, higher enrollments and more research mean a greater demand for professors. The direction of the derived relationship is clear: more output requires more input.

Specifying the exact nature of the relationship is immensely more complicated. First, the output of IHE's, knowledge, is essentially invisible and therefore immeasururable The products of IHE's rarely face a market where price may be determined. Costs of production are usually highly subsidized so that tuition payments cannot serve as a valid index of output. And, the output of education, many argue, is not intended to be marketable. The contribution of higher education transcends vocationalism and money-making potential. The many benefits of education which will always remain unpriced, even in a competitive market, and the benefits external to the individual educated, preclude the possibility of accurately measuring output.

Second, input cannot be measured in a meaningful way. Hours of work, extent of ambition, amount and kind of education are all roughly related to input productivity, but the relationshipsare not precise. Arthur Ross' statement about the measurement of the marginal product contribution of the blue collar worker seems even more appropriate for the professional worker: his contribution is unknown before and undecipherable after the fact. Even if we were to use the value added to the earning power of the college student by his college experience as a measure of output (an undesirably and unrealistically oversimplified measure), the increase in value could not be meaningfully allocated to the various factors of production.

The primary problem encountered in applying marginal productivity analysis to the academic labor market is the absence of a known production function. In more simple processes, the effect of an increase in input upon output is known. But in education, the economist is not given even the most elementary exogeneous variables. As a result, marginal productivity analysis does not guide decision making in the hiring process. Although the marginal productivity theory does provide a framework for formulating broadly generalized economic statements about market demand, other frameworks are more useful.

Demand for faculty is price elastic and kind flexible Traditional ratios between students and faculty usually determine within close boundaries the total size of the faculty. Unsettled is the market from which the needed members will be hired--historians, economists, or physicists? Masters' degree candidates, new Ph.D.'s, or experienced Ph.D.'s? research oriented, teaching oriented, or both? Between market substitution may well give rise to price elasticity. Instead of hiring high priced experienced Ph.D.'s, a college decides to hire a new Ph.D. or a man who still seeks his degree. The high going wage for research specialists will cause the less wealthy school to settle on a man without research abilities. Our findings show significant salary differences among specialties, experience levels, and orientation. Moreover, hiring is greater in those areas where the going rates are lower. After proving, this evidence tends to support the hypothesis of price elasticity. Both stretch out and substitution among labor types are common, though the substitution of capital for labor has, to date, remained small.

The primary determinant of faculty demand is the nature and size of an IHE's output, student enrollment and research commitment Beyond these variables, which reflect general educational philosophy and policy, academic traditions and expectations determine demand. For example, having decided to emphasize research, a university may consider only Ph.D.'s and "near Ph.D.'s." Its demand in the market for non-Ph.D.'s would be very low, for experience shows that non-Ph.D.'s are rarely productive researchers and the university would be ridiculed (and assigned a lower prestige rating) for failing to recognize this fact. Tradition says that good researchers hold Ph.D.'s. In the absence of precise productivity data to the contrary, data that is impossible to obtain because of the elusive nature of a university's output, the tradition will continue as a strong determinant of demand.

In this highly specialized market for college teachers where there is a general shortage, even supply is one of the determinants of demand. The availability of manpower in year n-1 undoubtedly influences the aspirations of recruiters in year n. For example, the university recruiter that senses a shortage of physicists may well use very different tactics in his market search. If physicists are thought to be in short supply, he will search the poorer graduate schools, the placement offices at some of the better schools, and industry. His demand may never be felt in the higher quality market, located in the departments at the better schools. The point is that the markets for high-quality and low-quality physicists are divided, with little arbitrage between them. A buyer's expectations determine which market he enters and thereby influence the level of demand in each.

CONCEPT OF SUPPLY

To the economy. The deceivingly simple rule is that labor will supply itself until the marginal utility from the goods bought by the wage received for an additional hour of work is no longer greater than the disutility of the work itself. As a general principle, the concept is quite valid, and it explains the supply of labor in professional markets as well as in the blue collar markets.

The study of professional jobs simply highlights a little stressed aspect of the generally valid theoretical statement: to wit, that the disutility of work should be viewed as a net figure. Jobs yield satisfactions as well as dissatisfactions. The work of a professor, for example, may be *per se* enjoyable and rewarding. In calculating the unpleasantness of a job, it is necessary to look beyond the gross estimates of dissatisfactions generated by the onerous aspects of the task to include also the satisfactions received from the enjoyable work aspects. In the extreme, it is possible to envision a person who enjoys his work so much that he would be willing to pay for the opportunity to do it. Although this aspect of the theory has not been totally ignored, and was discussed by thinkers as early as Adam Smith, it needs to be restated. Labor will supply itself to professorial jobs as long as the utility received from the work itself, the environment in which the work places the professor, and the goods purchased with the wages earned exceed the disutility generated by the unpleasant job aspects and the training necessary to qualify for the job.

In the short run, the economy-wide supply of equally qualified professorial manpower is relatively fixed, the only element of flexibility being the recruitment of scholars from outside the academic community. Within the academic community, the elasticity of supply varies greatly among disciplines. In chemistry, where over 3/4thsof the Ph.D.'s enter non-academic employment, the pool of potential professors not already teaching is large and elasticity is relatively high. In fields such as English and History, where secondary schools employ large numbers of persons who are at least minimally qualified to teach in college, there is also a fair amount of flexibility. It is in the fields such as sociology and art history that economy-wide, short run elasticity is very low.

Because college teaching is often regarded as the epitome of a "group of teaching jobs," the elasticity of supply made possible by upgrading is relatively large. Many secondary school and junior college teachers probably would prefer college teaching, if given the opportunity.[4] Under "normal" circumstances, this opportunity may never come. In a shortage situation, however, the colleges may be forced to hire teachers without Master's degrees where, before the shortage, the Master's degree was required. They may then draw upon the "less" qualified members of the teaching force by raiding the lower eschelon schools. Lowering their standards of quality will be an alternative to raising their salaries. Yet, if labor is measured in units of "constant quality," the colleges will be paying the same for less qualified labor. The price per unit will rise; though the price per person may not.[5]

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[4] In his survey of junior college faculty Leland Medsker found that, other things equal, 50% would prefer to be at a

At each eschelon in the educational hierarchy, the elasticity of supply is afforded by attracting the most qualified teachers from lower eschelon institutions. The Major League schools raid the Minors; the Minors raid the Bush League; the Bush League schools raid Siberia; Siberian schools draw from Junior Colleges; and Junior Colleges recruit among secondary school teachers.[6]

To the individual employer. As in all other labor markets, the elasticity of supply of labor to an individual employer is greater than to the economy as a whole, for the individual employer may raid the faculty at other schools in addition to those currently employed outside academia.

For the individual school, it is possible to increase its supply of equally qualified staff by making its jobs more attractive. It may raise salaries, lower teaching loads, institute graduate programs, and the like. Even in the short run, an individual employer may increase his labor supply, though it must usually be at the sacrifice of another academic employer.

The greatest flexibility of supply is, as with the supply to the economy as a whole, afforded by quality deterioration. By lowering the hiring standards, the individual school is usually able to increase the quantity of "quality constant" units of labor supplied at a relatively small increase in cost per unit.

Though the elasticity of supply afforded by quality deterioration is relatively high, the failure of suppliers to

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4-year college or university. The Junior College: Progress and Prospect (New York: McGraw-Hill Book Co., 1960), p. 175.

[5] For a description of constant quality supply, see my forthcoming article, "The Present Shortage of College Teachers," Phi Delta Kappan, March, 1966.

[6] For a more general statement of occupational upgrading, see Melvin Reder, "The Theory of Occupational Wage Differentials," American Economic Review, Vol. 45 (December, 1955), pp. 833-852.

respond to small changes in compensation means that the price elasticity of supply is relatively low. An individual school may raise salaries by 5% and see virtually no change in the quantity of labor supplied. Factors which are less flexible in the short run (e.g., course assignments and institutional prestige) are major elements in job choice which reduce the effectiveness of salary changes.

Here it may be helpful to distinguish between two species of price elasticity. Let us label them "price" elasticity and "cost" elasticity. Price elasticity may be thought of as the response of (say) Ph.D.'s (i.e., a homogeneous group of labor input which is of constant quality) to a change in compensation; for example, a reflection of the number of Ph.D.'s that could be attracted by raising salaries by $200. Cost elasticity is the flexibility of labor supply afforded by hiring slightly fewer efficiency units (i.e., less qualified suppliers) at the same wage rate. Given this distinction, price elasticity is relatively low; cost elasticity, relatively high.

It is interesting to note that if an employer allows his labor force to increase by hiring less qualified workers at the same wage, instead of hiring equally qualified workers at a higher cost--the marginal cost need not be greater than the average cost. Since the quality of a professional worker and his output is relatively difficult to measure, even well informed, continuing employees are likely to tolerate the injustice. The more qualified professors will find it difficult to prove that they are more qualified, and they will therefore be reluctant to object to the outwardly equal treatment. Although this practice of allowing quality to deteriorate as a means of avoiding high marginal costs is not unique to professional labor markets,[7] it may be more prevalent because of the greater variation in worker productivity afforded by the more permissive and flexible job responsibilities.

Another factor which allows employers to avoid high marginal costs is the tradition of salary secrecy which is more characteristic of professional workers. Traditional taboos on salary comparison often afford employers of professional workers the chance to hire the last man at a wage higher than that paid to others, even though he is no more qualified, with the prospect that the others will not clamor for compensating increases because of their ignorance.

Invisibility of supply. In the market for college teachers the supply of labor to an individual firm is substantially invisible. "Reluctant maidens" perch at the periphery of the market never allowing themselves to be seen unless there is a specific job opportunity that interests them. The market is composed largely of suppliers "looking in" upon demanders, and demanders looking out upon a mass of contented workers. Supply is analogous to buyers at a country auction. At the auction are serious buyers, "maybe" buyers, and pure spectators. Before items are actually placed on the block, it is difficult to differentiate. Only after specific items have been placed on the block (or market) is it possible to identify the buyers. At most such auctions, the majority turn out to be "maybe" buyers, persons who bid seriously only when an item is of real interest to them.

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[7] William G. Bowen, The Wage-Price Issue, pp. 98-100.

In the academic labor market, few suppliers identify themselves before specific vacancies are known. At any given time there are very few suppliers actually in the market, because the usual practice is to accept a new job before resigning from the old. Thus, there is no pool of unemployeds which stand as a ready source of supply. Market entry and exit are often simultaneous. Available supply is camouflaged.[8]

FURTHER OBSERVATIONS

The unique characteristics of supply and demand, as well as of a unit of compensation and a unit of labor, bring into question the relevance of a competitive wage theory and a single point equilibrium. Even in narrowly defined subspecialty markets, the concept of a single wage rate as equilibrium bears only a slight relationship to actual behavior. Professional workers are too heteregeneous in their output productivity. The markets for professional skills are, therefore, dominated by individual higgling. In college teaching, within a certain range each professor bargains his own rate of pay.

The eventual equilibrium is also strongly conditioned by the strength of the professor's desirable to be compensated by salary; as opposed to a pleasant environment, a desire course assignment, and the availability of adequate research facilities. Thus, even for professors of equal ability, their "equilibrium" wage rates will vary according to their unique preference schedules. A willingness to trade off salary for rank and a lower teaching load may well result in a lower salary than a market which was uninfluenced by personal preference would yield.

Ignorance among both suppliers and demanders about alternative options is still another factor decreasing the relevance of a single wage theory of equilibrium.

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[8] The necessity of advertising the availability of jobs in order to identify supply is not unique to professional labor markets. See, for example, Lloyd G. Reynolds, The Structure of Labor Markets, pp. 225-229.

In professional labor markets, economic forces underlie the long run trends and general movement and behavior. Superimposed upon the economic forces are, however, many psychological and institutional constraints and traditions with the result that a purely economic theory of equilibrium has serious limitations--in implementation if not also in theory.

RECOMMENDATIONS.........CHAPTER 21

This report was written, as stated in Chapter I, with twin objectives in mind--one theoretical and the other practical. The major factual conclusions are cited in the Table of Contents, and the major implications of these conclusions for economic theory are discussed in the preceding chapter. Although the implications of the foregoing analysis are alluded to throughout the study, it is desirable to take a thrid step toward a summary by consolidating the practical implications in one chapter.

Here it is tempting to leave the reader of the report with a series of guarded qualifications: "the labor market should be improved," "candidates and employers should approach the market more intelligently and rationally," "the overall supply of manpower to the nation's colleges should be increased," and so forth. Though relevant, such statements have limited value, for they fail to advance suggestions as to how markets may be improved, what more rational approaches to the market might be taken, and so forth. With the risk of raising criticism and controversy, I have decided to make recommendations that are specific and concrete. Presented below are plans of action that, after analyzing the information available, I believe should be taken as steps toward improving the flow of manpower in academic labor markets. The recommendations are presented in three sections according to what group might best take the step suggested. In the case of "the society," any number of groups might act as "society's agent."

FOR SOCIETY

1. Two major steps should be taken to increase the flow of information in the academic labor market: (1) a "Journal of Academic Vacancies" should be published and (2) "The Academic Register" should be established. These two recommendations represent the major suggestions growing out of this study and meet a large number of different types of needs of the market. Each of these suggestions will first be elaborated in some detail and then the issues raised by the suggestions will be enumerated.

Journal of Academic Vacancies. This publication would list and briefly describe openings in four-year colleges and universities. A typical entry might be:

> ENGLISH (Am. lit.)--Columbia University; 9 hours; 1 course with seniors on American Novel; 2 freshmen survey courses; $7500 for 9 months; asst prof; PhD required.

Any IHE could list as many vacancies as desired without charge. The Journal would be published monthly, except in September, October, and July. The same vacancy could be listed more than once, but only if the employer sent in a second request and not in consecutive issues. The vacancies would be arranged by subject matter specialty (i.e., discipline) and there would be approximately 50 discipline breakdowns. Within each discipline lists would be ordered by salary.

The journal would be published in two forms. First, complete journals would be published for use by college placement offices, commercial placement agencies, other placement intermediaries, and potential employers. This might be sold for an annual fee of (say) $50-$100. The journal would be made available on punch cards if so desired. At the beginning of the "complete journal" would appear summary statistics on the salaries offered to Ph.D.'s in various disciplines, the average beginning ranks offered, and so forth. This information would be valuable to employers in framing job specifications and to counsellors working with job seeking candidates. Second, "discipline issues" would be published for distribution to individuals. Fifty separate "discipline issues" would be prepared. These would be mailed to individuals who subscribed for (say) $3 per year or sold (at a large discount) to professional associations who could distribute them as supplements to their scholarly journals (like the Employment Bulletin of the American Sociological Association).

The main problem with any published list of vacancies is obtaining the interested cooperation of employing institutions and thereby the vacancies to publish. If the suggestion of a Journal is a good one, and I believe it is, there will be no problem once the journal gets started. The problems will arise in the transition stage. Here it will be essential to wage a concerted and personalized publicity campaign and to elicit the cooperation of other placement intermediaries. One phase of the campaign might be, for example, to solicit the cooperation of a college placement office. The larger placement offices receive over 7000 vacancy notices per year. Upon receiving a notice they might return a note to the notifying employer asking him to "check here and return" if he would not object to his vacancy being publicized in the newly established journal. Issues such as these will be discussed subsequently, but first let us turn to a more detailed statement of the second phase of the proposed information system.

The Academic Register. In this instance the proposal is for a nationwide listing of manpower capable of teaching at the college level. The listing would extend beyond those currently looking for jobs and beyond those currently employed by academic institutions to include all persons who have the graduate level training that might allow them to teach in college. In this sense the register would be a manpower inventory, similar to the National Science Foundation's Technical and Scientific Manpower Register.

Individuals would be encouraged to complete forms for the Register by their professional associations, their graduate schools, their college placement offices, and other appropriate organizations and individuals. Registration would be free of charge. The form would be only one leaf. The first part would ask for basic information about the individual and his activities and accomplishments. Requested would be information about degrees obtained and granting institutions, disciplinary specialties and subspecialties, extent and character of publications and other career related accomplishments, courses taught (if currently teaching), age, and employment experiences relevant to academic employment. At the bottom of the form would be a question such as: "Are you interested in relocation?" Options might be: (1) Urgently seeking new situation; (2) Actively looking for new situation and expect to move within 18 months; (3) Looking for new situation but will probably remain at my current job for the next year or so; (4) Keeping alert to really good opportunities but am quite satisfied in my current situation; and (5) Remaining here and have no desire to be considered for other positions. Noticeably absent would be questions regarding regional preference, salary preference, rank desired, and the like. These could be estimated from the other information.

The forms would be returned to the central office of the Academic Register where the information would be transferred to punch cards. When an employer had a need he could request a "search of the cards" for the (say) twenty-five most appropriate candidates. The employer would have the option of defining his needs as specifically as he might desire. He might insist upon the Ph.D., the area of subspecialty, and age--but ask that the list submitted take no account of the availability of the individuals. Or, an employer who could not afford to be this particular might request the candidates, regardless of merit, who are readily available and likely to accept an appointment if offered. The employers requesting such service might be charged (say) $10 per search. At the time of registration individuals would be given the option of requesting to be notified of suitable vacancies, for a fee of say $5.

The issues involved. There are many details to both plans that could be specified, but these skeleton descriptions are sufficient to indicate a position on the major issues. Let us look in detail at each of these issues.

(1) Is a centralized "placement facilities" necessary and desirable? Our answer is obvious, "yes"--but why? In addition to the fact that 35% of the newly hired college teachers rate the current opportunities to learn about vacancies in their field as "poor" or "very poor," that many employers and candidates continually are calling for more and better channels of communication, and the many other arguments which are presented in Chapter 18--I am convinced that the excessive proliferation of intermediaries is weakening all of them. What is happening is that candidates and employers are seeking help from different intermediaries and that neither is as satisfied as he might have been if they had gone to the same intermediary. There are so many intermediaries that in order to reach even a majority of the job seeking candidates an employer must mail hundreds of notices of vacancy.

Each of these notices must be processed by the intermediary that receives it. Intermediaries throughout the country--college placement offices as well as commercial employment agencies--are complaining that much of their time is spent in processing these vacancies. Yet, each of the intermediaries is doing essentially the same thing: translating the vacancy notice into a standard form and categorizing it for future reference. Much work and effort would be spared if this task were done only once, and the results were shared by all. Moreover, the centralization of the processing of vacancies would reduce the workload of the hiring institutions and, most importantly, it would tend to increase the chances that candidate and vacancy are placed in "pools" that come in contact one with the other. That is, the centralized listing of both vacancies and candidates would insure that all vacancies and all candidates have an opportunity to be paired.

(2) To what extent should the centralization be pursued? Our answer is "limited." As explained in the answer to the next question, there is a great deal of strength in the current placement system which must not be lost. Many aspects of effective placement assistance cannot be centralized, such as eliciting registration, defining properly the preferences of individual candidates and employers, offering suggestions as how

specific problems encountered in placement might be resolved. A computerized locator service is no better than the instructions that are fed into the computer. The present placement intermediaries would need to continue in their work as "instruction experts" who define the parameters for the individuals and institutions with whom they have personal contact.

As proposed, the Journal and the Register would probably increase rather than decrease the need for assistance in decision making. The alternatives to consider are increased. In the case of the Journal, all candidates are exposed to all jobs. There is no pre-selection. The Journal is simply a resource instrument for the job-seeking candidate. Jobs are not rated, openings are not referred--the Journal simply provides a list of opportunities and a factual description of them. In the case of the Register the role played by the centralized office is greater, but still leaves a great deal of discretion to the users. Instead of attempting to identify the one best candidate for a given job, the register would provide 25 or so candidates. From these, either the employer or his agent would necessarily have to make further cuts--deciding in what order to contact the candidates, if at all. Moreover, if the employer were not satisfied with the names of the candidates that he received, he could request a computer rerun with slightly different parameters. It is important that at no point should the Register "ration" names of available candidates.

(3) Should a centralized system be entirely new or should it be tied in with the existing placement system? Here I am convinced that the very success of any consolidated system rests upon the enthusiastic cooperation of existing placement intermediaries. There are a number of services essential in the placement process that neither the Journal of Academic Vacancies nor the Academic Register offer. First, there are no provisions for the collection of recommendations and the mailing of dossiers. It would be hoped that college placement offices, or the graduate school offices, at the candidates' graduate school would continue to assume responsibility for maintaining these credentials.

Second, and most important, there are no provisions for counseling. The very nature of the two proposals is such that counseling is almost impossible. Yet, many individuals need advice on what to look for in jobs and how to approach the market. The localized offices of some professional associations, of college placement, of graduate school departments, and of the directors of Ph.D. theseswould still be an essential element in the placement process.

Third, at least in the transition stages, both candidates and employers would need to be urged to use the Journal and the Register. The success of these innovations will be enhanced if the existing placement intermediaries will distribute "application forms" and encourage registration. Many of the intermediaries may prefer not to suggest direct registration but to register the candidates who come to them, or the job vacancies, themselves. For example, a college placement office might want to forward the registration of one of its applicants to the Academic Register with the request that appropriate jobs be searched. The placement office could itself suggest the parameters to be used in the search and then, after the names of vacancies are returned, make further cuts in the lists of vacancies in behalf of the candidate. Or, a church-related placement service may want to list vacancies with the Academic Register, asking that the most appropriate candidates be identified. The list of 25 or so candidates could then be cut before referring the candidates to a particular college administration.

Completely centralized placement is neither necessary nor desirable. There are strenghts in diversity and division and these must not be lost. Uniformity would be tragic. The existing network capitalizes upon special interests. Most of the more active placement liaisons serve two needs simultaneously: their own needs and the needs of the market. For example, college placement offices, the departmental offices of graduate schools, and the professorial mentors of graduate students work to place their products and, in the process, enhance their own reputations as well as that of the candidate. Well placed proteges serve as appropriate advertisements to the quality of the school and thereby enhance the school's prestige and individual prestige as well. Similarly, the church-related placement services provide a special recruitment arm for denominationally related schools. To centralize such organizations out of the market would be to sacrifice a valuable service. Each type of placement organization has a special role to fill. The consolidation that occurs must be cognizant of these special roles. The consolidation must unify but not destroy. What might be gained through economies of scale, by decreasing the obscurity of liaisons and by widening the scope of any given labor pool, must not be lost by losing the strength that diversity affords. The solution is to consolidate some functions of placement services while strengthening other functions within the current organizational structures.

(4) By whom should the Journal and the Register by managed and financed? Our answer is that they should be managed by an independently organized, private, non-profit corporation and financed by whoever is willing.

The most crucial element in the success of the Journal and the Register is gaining the acceptance of the academic community. Any placement effort is sure to fail without a strong and enthusiastic endorsement by the community of scholars. The Journal and Register need to gain the endorsement of organizations such as the American Council on Education, the American Association of Colleges, the regional accrediting associations, the Association for School, College, and University Staffing, the College Placement Council, the American Association of University Professors, the church-related Boards of Education, the Association for Higher Education, the American Association of University Women, and the many disciplinary professional associations. Only if a large number of these organizations are willing to have their names associated with the effort will the Journal and the Register be guaranteed the respectability and acceptance that is crucial. I would suggest that an independent corporation be established for the sole purpose of publishing the Journal and maintaining the Register, a corporation similar to The National Merit Scholarship Corporation.

As for financing, at least in the beginning when the register is becoming established and when the Journal must be given extensive publicity, the small fees proposed above will not cover expenses. Funding will be necessary. Hopefully, the effort will be sponsored by a major five-year grant from a large, private foundation. If, however, funds are not available from this source, the feasibility of financing with government funds should be investigated. Although the current study gives many strong indications that a publicly controlled, centralized placement facility will not be accepted by the academic community; it may be that a privately controlled and publicly financed effort could be devised that would gain acceptance.

Unfortunately, I have not had time to develop specific cost estimates. There is no doubt that the sums involved would be substantial. If the scientific professional associations would cooperate by releasing the forms which most of their members have completed for the Technical and Scientific Manpower Register the total expense would be reduced considerably but still be sizeable.

(5) Should registration by candidates and employers be compulsory or optional? In both instances, our answer would be "optional." The aim would be to provide a service so valuable that few candidates and employers could afford not to register their needs with the Journal or the Register. Although a complete listing of candidates and vacancies would definitely be desirable, the "manpower control" overtones and the enforcement problems of compulsory registration speak in favor of allowing individuals and employers not to register. Moreover, any attempt at compulsory registration would so alienate the academic community that the efforts would be sure to fail.

"Optional" does not mean, however, that strenuous efforts should not be made to elicit complete registration. In all instances, individual graduate schools should be encouraged to advise strongly to their emerging students that they place their name in the Register and that they consult the Journal. Educational associations such as the American Council on Education, the American Association of Colleges, and the various regional accrediting associations should be encouraged to urge their members to list vacancies. Several of the more prestigious IHE's should probably be approached about including their vacancies in the initial issues of the Journal so as to increase its acceptance and respectability. Pressure should be applied, but the option of not listing should be allowed.

(6) Should employers be exposed to candidates, or should candidates be exposed to employers? Here the question is a

matter of ordering. One technique that might be pursued by a placement intermediary would be to collect information on a large number of candidates and distribute it to prospective employers. The opposite technique would be to develop a list of job vacancies and distribute it to candidates.

As the above proposals imply, I believe that both techniques are necessary. In a shortage market such as that which exists today, candidates may be particular about the jobs they select. Employers understandably resent expending a great deal of effort pursuing candidates who will not accept the jobs offered. The publicizing of vacancies allows candidates to preselect employers. In most instances candidates will contact only those employers for whom they would be willing to work (under certain realistic terms). At the same time, the traditions of the academic labor market are such that many candidates are timid about active job seeking. They are only on the fringes of the labor market. They are not even sure that they are interested in pursuing alternative employment unless and until a specific opportunity comes along. These individuals will never respond to advertised jobs available; many will never even read them. They need to be locatable and contactable. Only an employment register, one which includes candidates who are not actively in the market, can provide a solution to the marginal nature of participation of individuals in the academic labor market. Candidates should be given an opportunity to look at job vacancies, for they can do a great deal of sorting, but also employers must be given the opportunity to view supply broadly.

(7) Should individuals and institutions be allowed to remain anonymous? Our answer: "no" in both cases. The name of an institution can be very helpful in evaluating the job opportunity. If he knows the name of the school, an individual may look up information on the school such as its precise location, the average college board scores of entering freshmen, the number of Ph.D.'s on the faculty, and so forth. At the same time, there seems to be little value to the school of withholding its name. It is true that if an obviously underqualified candidate replies to a "box number," the school may forever remain anonymous and does not need to reply. At the present time it is also true that there may be a certain "unrespectability" about advertising in professional journals and that the withholding of a name must be done to "save face."

But both of these disadvantages may be easily overcome. In the first instance, the Journal may, perhaps at the top of each page, include a brief statement to the effect that if an employer does not respond within two weeks it may be expected that he is not interested. Or, a standard form letter may be developed by institutions. As for "unrespectability," this will be overcome by the very publication of names. Already there are some quite respectable academic institutions that are advertising vacancies in professional journals. When newly solicited vacancies from very respectable institutions are added to these, most administrators will realize that the sanctions that at one time may have been placed upon those who advertise no longer exist.

As for individuals, there is little need for anonymity. Listing with the Register is not a statement that the individual is looking for a job. It is simply a statement that he is a chemist, an historian, a mathematician. If the names of individuals who are actively looking for jobs were to be published, then there would be some reason for anonymity. The only safeguard that seems necessary under the presently proposed Register is not to refer the names of persons currently working at College A to the administration at College A.

(8) Should the Journal and the Register be extended to include junior college teachers and high school teachers? At this time our answer is "no." Again, the major concern is for gaining the acceptance of the academic community. At least until the Register and the Journal are firmly established as respectable instruments it is important not to dilute their respectability with large numbers of underqualified applicants and professionally less respectable jobs. Once established, it may be feasible to enlarge coverage.

At the beginning, a minimum requirement for membership in the registry should probably be either a master's degree or the holding of a teaching assignment at a four year college or university. At the beginning non-academic employers, junior colleges, and other non-collegiate employers should probably be denied participation.

2. An inexpensive pocketbook or phamphlet on "How to Find a College Teaching Job" should be written and distributed widely. Included should be items such as brief statements about the qualifications normally required of individuals who teach in various types of IHE's and in various disciplines, the types of placement assistance that are available and the names and addresses of these intermediaries, the "ethics of job seeking" such as the May 15th deadline on resigning appointments, the average salary levels and rank attainments of beginning Ph.D.'s in various disciplines, and a placement bibliography. Among the citations in the bibliography might be American College and Universities and American Junior Colleges published by the American Council on Education, the National Education Association's biennial reports on the Supply and Demand of College Tecchers, guides to colleges which are published primarily for use by students but are also helpful to prospective faculty (e.g., Lovejoy's), the salary ratings of various schools as offered by the Summer Issues of the AAUP Bulletin, analyses of fringe benefits as stated in Greenough and King and in Ingraham, ratings of institutions as included in Berelson's Graduate Education in the United States and in the appendix of this volume, and general information on the academic labor market as offered by the studies by Wilson, Marshall, Stecklein, and others.

Another valuable item to include in such a phamphlet would be a checklist of the factors that might be considered when choosing a job, such as the 17 factors listed in Table 1 of Chapter 19.

By providing the information that will allow individuals to make more intelligent marketing decisions, the efficiency of the labor market should be increased and the frequency of incorrect moves should be reduced.

3. Market information should be more widely publicized. In formulating job offers information on the salaries being offered by other schools would be generally helpful to prospective employers. This information would need to be relatively specific and quite current to be useful. It may be that the Journal of Academic Vacancies proposed above could make such general data available to collegiate employers.

General information on methodologies of approaching the market might also be helpful to academic employers. In many institutions the employment process is delegated to department heads. The turnover of heads of department is such that no one man has a great deal of experience in hiring. Although much of what needs to be known is transmitted by the chairman's superior and predecessor, the distribution of a booklet similar to that prepared for candidates would probably be helpful. One suggestion might be simply to orient a section of the pocketbook or pamphlet for candidates toward employers.

4. Professional associations should be encouraged to offer placement services to their members at annual meetings. Convention placement services have earned the respect and attention of many members of the academic community. In many disciplines they are currently providing a valuable and needed service. The annual meetings in many disciplines are involving increasing numbers of individuals so that the previously informal methods of communication are no longer adequate. More formal structures are needed and the many successful convention placement services have proven that more formal structures are possible. Innovations such as advance registration, the provision of adequate interviewing space, the process of self-selecting of candidates and of jobs, and the flexible provisions allowing anonymity have advanced the art of convention placement servicing to a degree that almost all disciplines would find them helpful. The United States Employment Service is often willing to take on both the management and the financing of such services. Professional associations should be encouraged to inquire.

It may be that the disciplines not already doing so might consider scheduling their annual meetings during the recruiting season, between November and May. Few will deny that one of the main contributions of the professional association meeting is the provision of an opportunity for talk about jobs. Summer and early Fall meetings are poorly timed if such talk is to be meaningful--for most institutions and individuals have not yet assessed their situations for the year ahead.

5. Graduate school departments should appoint a faculty member as liaison with the college placement office. College placement offices have valuable services to offer prospective college teachers and their professors. Mainly, the college placement office may unburden the department from the responsibility of processing large numbers of job vacancies and from developing and distributing sets of candidate credentials. Even if the department desires to maintain control over the matching of candidates and jobs in the time-honored tradition of informal placement, it behooves the departmental faculty to delegate some of the more routine chores to an office that has the facilities and staff to handle them. As described more fully in volume I , especially in the description of the system at the University of Illinois, the appointment of one person to work in tandem with the college placement office often results in the increased effectiveness of the placing effort.

6. Graduate schools should consider the possibility of requiring candidates for graduate degrees to develop a credential file with the placement office. The credential file would include a transcript of academic accomplishment, several letters of recommendation from graduate schools professors written at a time when the candidate is still well remembered by the writers, and a form on which standard information such as age and publications are entered. Once developed, this credential file could serve as a life-long reference for prospective employers to consult. The advantages of having a credential file are developed under recommendation number 22.

FOR HIRERS OF COLLEGE TEACHERS

7. Recruitment strategy should be based upon extensive knowledge of the market and varied according to the type of man sought. Staff recruitment is typically quite inefficient. Much effort is dissipated in unnecessary activity while, at the same time, recruitment efforts are not sufficiently extensive. Though sometimes true and even justifiable in a minority of cases, the estimate that each new faculty member costs nearly $10,000 to recruit is much higher than it needs to be.

As the search commences, it is important to identify the object of the hunt; that is, to specify the type of person that the IHE would like to find and hire and would be able to attract. By narrowing the field of candidates, the search task becomes much more surmountable. Certain types of faculty tend to be located in certain locations. For example, recently trained "near Ph.D.'s" will be found at the graduate schools, "near Ph.D.'s" with teaching experience will be found at the smaller schools geographically surrounding graduate schools, good candidates for the department chairmanship at a small school will be found at similar positions in other small schools and at the associate professor level in large ones, prestigious and publishing scholars will be found teaching at the major graduate schools, good classroom teachers to staff freshmen and sophomore level courses will be found in the high schools. To state the obvious, it is unwise to be looking for a department chairman in the high schools just as it is poor strategy to seek someone to teach 15 hours of elementary level courses from the faculty of major graduate schools. Employers could avoid a great deal of wasted effort if they would educate themselves about the major sources of supply of prospective faculty and the characteristics of the faculty found at these various sources.

As much, if not more, effort may be saved by developing the type of knowledge that the University of Michigan is a major producer of Ph.D.'s in music, that the University of North Carolina has one of the top rated sociology departments, and so forth. To write Harvard requesting the names of Ph.D.'s in geography when Harvard grants no such degree is wasted effort.

At the outset, realistic terms should be attached to the job and expectations should be properly framed in light of these terms. Too often a recruiter goes to market looking for a well-trained Ph.D. without the wherewithal to attract such a man. Naturally he returns home without his catch which gives rise to still another round of recruitment in which either the terms of employment must be made more attractive or the quality standards lowered.

Each institution should know the "hunting grounds" in which it is most likely to be successful. Many college teachers have definite preferences for and against teaching in a church-related setting versus one which is not, in small IHE's versus large ones, in colleges versus universities, and in particular regions of the country. Recruiters should recognize these "contours" and take advantage of them by seeking individuals who are already familiar with the region, have previously indicated a preference for a small, church-related college and so forth.

Finally, it is important for recruiters to know the traditions in various disciplines and in various graduate schools. Whereas it is usual for a man to leave graduate school before receiving his degree if his field is English, the non-Ph.D. in chemistry should be regarded with suspicion for getting the doctorate in this field before leaving school is the rule. Similarly, even within the same discipline individual graduate schools differ in their desires for their graduate students to have a full time teaching experience before getting their degree.

I would not suggest that one recruiter may be expected to develop all of this information and still maintain his regular faculty appointment. All that would be hoped is that recruiters recognize the relevancy of such information when approaching the market and do the best they can to use the information they do have.

8. Well planned recruiting trips to the campuses of prospective faculty should be considered. This as an efficient means of contacting a large number of candidates with a minimum amount of effort and expense to both the candidate and the school. If well planned, the recruiter will get a chance to talk with far more candidates than would consider actually visiting the recruiter's home campus and, if the recruiter is convincing, he may actually influence the choice process of prospective faculty so that they do not eliminate his IHE from consideration without at least a visting to the campus.

The recruiting visit, similar to the descent of industrial recruiters upon the graduating seniors, is increasingly popular with IHE recruiters. The success of these trips is heavily dependent upon advance planning. In the first place, it is important that the recruiter alert officials on the graduate school campus of his upcoming visit well in advance so that prospective candidates may be lined up. Secondly, and more importantly, the recruiter must realize that the academic labor market is still primarily an informal one. Prospective professors remain timid about making their availability known. Many prospective candidates who reside on campus will not "sign up" to talk with the visiting recruiter. It is the recruiter's responsibility to identify in advance people and methods of contacting these individuals. If at all possible, it is best to visit campuses where entrees into the informal market exist. Before visiting the University of Arizona, to locate an historian, for example, the small college dean might check with his present faculty to learn if anyone knows personally a member of the Arizona history department faculty and, if so, urge a letter of introduction prior to the visit.

During these visits it is often possible to talk with persons who know of candidates not residing on campus who might be qualified for and interested in his vacancies.

At all times there must be a realization that twenty-five percent of the newly hired college faculty do nothing to seek their jobs. Much of the best qualified portion of supply never reaches the market and has to be sought out.

9. Curricula flexibility should be maintained. Considering only the implications for the staffing problem, there is strong evidence in favor of an IHE's allowing its curriculum to be sufficiently flexible to allow for the addition of a new course in the subspecialty of a prospective new faculty member and the deletion of an old one that he does not want to teach. With the possible exception of the attitude and ability of administrators, the courses that a prospective professor would be asked to teach are the most important determinant of job choice. If he prefers the course assignments, he is likely to accept the job. When staffing problems become acute, an individual IHE may be able to attract faculty by letting them, within limits, "write their own tickets."

Almost as important in job choice is the number of hours of classroom teaching required by two competitive job offers. Here again, the IHE's who wished to attract the man might well consider allowing experimentation on class size and teaching technology (e.g., educational T.V.) with the hope that teaching loads may be somewhat reduced.

Above all, as suggested above, an IHE must establish and maintain a confidence in itself. If it is to be successful in recruitment it must have a reputation for freedom of thought and action. If such a reputation does not exist, a substantial majority of prospective college faculty will not even consider the vacancy.

10. Smaller IHE's should, whenever possbile, cooperate with nearby IHE's in developing research facilities for their faculties. This may involve working out an arrangement for library permits for college faculty at a nearby university, or access to a large computer. But the solutions will not always be so easy. In some cases, it will be advisable for several smaller IHE's to bind together in a cooperative effort to coordinate their library purchases and to purchase jointly a computer. Already there are a number of outstanding examples of such cooperation, not only among all small schools and between small and large schools but also, in the case of very expensive and very specialized reaserch hardware, between two and more large universities.

The importance of developing such facilities is indicated by the consistent statements of academic scientists (and to a lesser extent social scientists) that among seventeen different factors the most important determinant of job choice is the research facilities provided. That is an indication that without providing such facilities the smaller schools cannot expect to compete for faculty with the larger ones, at least not in the more research oriented disciplines and for the better qualified staff.

11. The non-egalitarian salary structures currently existing within most IHE's should not be substantially altered. There is a strong argument that it is best for a given IHE to pay academic physicists, musicologists, historians and electrical engineers approximately the same salaries. All have undergone extensive and costly training; all contribute to the vitality of the academic community; all are college professors and may be expected to maintain similar social circles; all are specialists in their field of endeavor--therefore, all should receive about the same salary.

This argument is dangerously fallacious. What it is important to understand is that the salary of a professor is not dictated by inherent worth, spending needs or training expense--salary is determined by scarcity value. If five top notch theologians are willing to supply themselves to a small Methodist

IHE for $7,000 per year and less and not even a mediocre chemist can be found and attracted at that price, the IHE must decide whether it wants another religion course or a single course in chemistry. If it decides the latter, then it must pay the price that chemists demand.

By dividing its markets and paying high salaries to professors in scarcity disciplines and low salaries to ones in surplus disciplines an IHE is able to maximize the value that it obtains for its limited funds.

An analogous situation arises even within the same discipline where an IHE must "capitalize" upon the non-economic ties of its longer-service faculty by paying them less than it would have to pay for equivalent talent if it were buying on the open market and thereby freeing funds for competing with the more wealthy institutions at the beginning ranks. Few would deny that this practice of penalizing those who have been most loyal is undesirable. But I think that many will agree with me that when faced with the choice of hiring in second-rate faculty and paying old faculty equitable salaries, remaining competitive may be most important.

Of course, there is a breaking point, that point at which the old faculty rebel and protest so much that morale is broken and the teaching-learning processes cease. Within this limit, however, the policy of paying different salaries according to scarcity value is well conceived and should be continued.

Given the unimportance of rank in determining job choices, it may be that arguing for the granting of promotions at an earlier stage in the scarcity disciplines is not justified. I am inclined to believe that it might be wise for individual IHE's to offer rank on an egalitarian basis (promote the musicologists as rapidly as the market for physicists demands) so as to preserve an intra-campus, interdisciplinary measure of worth and experience--and to allow the salary differentials only to be dictated by the markets exogenous to the individual campus.

12. More appointments should be made without tenure. In many IHE's the ranks of associate and full professor automatically carry with them the right of tenure, or life-time job security. For institutions with such tenure provisions, hiring at the associate and full professor levels involves substantial risks, for there is no opportunity to correct misjudgments after the fact.

These risks do not need to be taken. Evidence strongly suggests that a minority of job switching college faculty are concerned about job security. Moves are made for motives different than rank and security in the vast majority of instances. Most movers are sufficiently well qualified not to worry about the prospect of no job.

Since the immediate granting of tenure does involve risks for the IHE and since job choosing professors are not particularly concerned about the presence of tenure in their appointments, it would seem wise for more schools to consider the policy whereby all new faculty, regardless of the "hiring in" rank, are automatically placed on probation for at least one year.

13. Employers should take advantage of the placement facilities currently available and proposed. This is meant as more than a cliche. Employers should recruit more actively. The imperfect academic labor market often hides the best qualified candidate until an extensive search has been pursued by an employer. Moreover, it is the very best qualified candidates who are on the market for the least amount of time and who often never reach the market. These candidates will often not be hired unless a recruiting IHE has made early contact. The current balance of the supply of and demand for college faculty is such that the recruiter cannot be complacent and expect to hire the best people.

Although the advertising of vacancies cannot be so overt that it violates the prospective faculty member's vision of "acceptable behavior" for a reputable academic institution (e.g., newspaper want ads), publicity efforts can be widened considerably without endangering this limit. Surprisingly few methods of finding jobs are generally regarded by college teachers as "unprofessional."

The fear that a well advertised job will bring avalanches of requests to be considered, though partially valid, is substantially unfounded. Evidence suggests that the candidates themselves have relatively accurate self-images that allow them to discriminate the jobs for which they will be seriously considered from those for which many better qualified candidates will be available.

There is a large segment of supply on the fringes of the academic labor market that cannot be drawn to a job by any means other than advertising. At all times there are a number of college teachers who are susceptible to job offers but hardly realize it themselves. If they hear about the right opportunity, they will apply. But if they do not hear, no one will even know that they would have been available. This type of relationship to the market is particularly frequent among many individuals who are not currently teaching at the college level but are qualified to do so. Unusually large numbers of these non-academics must be drawn out of business, government, and the high schools by specific and concrete job opportunities. These potential sources of supply will be lost to the employer who chooses not to advertise and recruit.

14. Employers with accession rates substantially different from the norm (about 18%) should investigate and determine why. High turnover rates may indicate frequent administrative blunders, unusually low faculty morale, or a large number of other problems which might be subject to correction. In any case, the continuance of high turnover is costly both in terms

of the instability imposed upon the students and research as well as the not inconsiderable cost of finding and attracting new staff.

Low rates of turnover may indicate a lack of vitality and a complacency and self-satisfiedness in the faculty. Too much stability may mean that new staff is not being added to bring forward new ideas and question the old ones. It may mean that the staff is so poorly regarded by other IHE's that no one is willing to make an offer.

On the other hand, high accession rates may indicate a program of rapid expansion in the faculty. And low accession rates may be the successful result of a concerted effort toward faculty retention. There is nothing wrong with accession rates considerably different from the norm per se; but the cause of the variance should be examined.

FOR INDIVIDUALS SEEKING NEW JOBS--

15. Individuals should recognize that a price must be paid for remaining at one job and being unwilling to consider seriously alternative offers. With few exceptions, IHE's have been forced to follow expeditiously the policy of paying high salaries and scheduling low teaching loads where the competitive pressures are greatest. This means that they must offer premium terms to the newly hired and may compensate that portion of their present staff which allows itself to become isolated from competitive markets at less than their competitive value. For professors who are willing to relocate, it means that almost every relocation represents an advancement in salary and often an advancement in academic rank. A premium is paid in order to attract new staff and it is the professors who are willing to move that receive it. Of course there is a point beyond which a work history evidences so much mobility that employers become suspicious and refuse to offer the usual premium but overall professors are more prone to be too immobile rather than too mobile for their own good.

16. Individuals should realize that mobility is less acceptable and less possible after age 45. Job shopping in the early years of an academic career is accepted, indeed expected. As the young junior faculty member switches from job to job he develops usually breadth, exposure, and avoids becoming tied by large amounts of immobile job capital. The institution to which he moves may hire him at a "trial" rank (one that does not automatically carry tenure) and the market for his services is a large one.

But as a college teacher approaches 40 his alternative opportunities diminish. He is ready to assume an associateship or a full professorship and yet many IHE's fill these positions by promotion from within. Where before his desire to move was unquestioned, prospective employers now start to wonder and to ask why he has not settled down.

17. *Individuals should be aware of the premiums placed upon different abilities in the academic labor market.* Hopefully, recognition of the differential scarcity values of various types of college professors will be accomplished before the field of graduate study is chosen, but at any stage of a career this knowledge is important for intelligent market behavior. College teachers should know, for example, that engineers are more scarce than mathematicians, researcher-publishers than teacher-counselors, and Ph.D.'s than non-Ph.D.'s. The importance of obtaining a Ph.D. before entering teaching varies greatly according to discipline specialty. In most of the scientific fields, the individual should realize that few persons leave graduate school before completing the Ph.D. and that those who do are second-class citizens in the academic community. Though the Ph.D. is important for the man in English and music, its importance is considerably less than in the sciences and other data oriented disciplines.

18. *Individuals should realize that decisions made in the early stages of their careers will largely determine the course of action that will be available later.* Although beginning positions at prestigious schools, as contrasted to those at the poorer schools, pay no more, often offer a lower academic rank, give less promise of the possibility of remaining at the IHE permanently and of promotion, and demand greater research productivity--these same highly prestigious IHE's facilitate research by scheduling lower teaching loads and providing better resources on which to draw, generate a highly competitive atmosphere that is often conducive to research productivity and therefore are ports of entry to a wider range of job opportunities. One of the primary advantages of an appointment at a highly prestigious institution is the opportunities to which it may lead.

Although it is *always possible* to move up the ladder of academic prestige and although "scholar's siberia" is the product of individuals' abilities and ambitions (not artificial barriers between IHE's of different qualities), resistance to movement down the ladder is more easily accomplished than movement up. It is best to start at a highly prestigious undergraduate school, move to an equally prestigious graduate school, and accept the initial job at an IHE of high prestige.

19. *Individuals should recognize that starting salaries are not always a valid index of the monetary value of various job options.* Competition has forced all IHE's to pay approximately the same salary to beginning Ph.D.'s. Yet, large salary differentials are common at the higher ranks, at the associate and full professor levels, where competitive pressures are less and less binding.

Moreover, the fringe benefits vary widely among institutions. In general the private schools offer more attractive packages than the public ones. There are differences not only in the level of fringe benefits but also in their prospective transferability and vesting that should be taken into consideration when choosing among jobs.

20. Checklists of the factors to be considered in job choice should be developed and used. Job choice decisions are complex, for there are a large number of influences upon the desirability of competitive job offers. To aid the individual in his decision, a list including factors such as those listed in Table 1 of Chapter 19 should be used so that the individual may place the various attributes and drawbacks of each job offer on an objective and comprehensive manner.

21. Individuals should educate themselves about the various methods of finding jobs. It is important to realize that many intermediaries provide placement help and that, in spite of traditional beliefs to the contrary, they are used often.

Blind letters are an especially productive method of locating job vacancies. Unsolicited letters of inquiry often receive serious consideration and result in good offers. Although the poorer IHE's who must hire more because they have higher than average turnover and expansion rates are more prone to follow up blind betters, some of the better employers also consult them.

In general, it is important that an individual educate himself as to the means of finding various types of jobs. He should learn, for example, that the rules for finding senior positions at top prestige IHE's do not always apply when seeking appointment at a less well known and less prestigious school.

It is important to realize that schools too have hiring preferences: that church-related IHE's prefer individuals of the same denomination, that women's schools prefer (or at least do not discriminate against) women, that top prestige schools demand a record of strong publications for senior appointments, and so forth.

Individuals should learn about the possibility of registering with church-related placement services and be brought to an appreciation of the importanceof the professional meeting as a time of placement, especially if an organized placement service has been established.

The importance of nurturing friendships and acquaintances as channels to knowledge about various jobs opportunities should also be appreciated. Responding to this knowledge, individuals should strive to develop professional contacts and to maintain them.

22. A credential file should be developed, even if not used. The dossier--which includes a factual statement of an individual's training, experience and accomplishment and the "letters of recommendation" from at least three persons in a position to evaluate the candidate--is often requested by

employers as an aid in the initial stages of evaluating candidates. If an individual desires to consider a large number of job options, it is unrealistic to ask recommenders to send individual letters of recommendation to all prospective jobs. Instead, a "cooperative dossier" may be developed at a college placement office, a commercial teachers' bureau, or some other placement intermediary. This may then be sent to the many employers who ask for it. The dossier becomes a permanent record that may be used whenever an individual again decides that he would like to change jobs. Although the dossier which is gathered several years prior to the time of job search will certainly need to be updated, it may well include letters of recommendation which could not be reproduced at the later date such as those from persons who have passed away or who have only limited memories of the candidate involved. Even if an individual does not use the dossier when seeking his first job, it is good standard procedure to develop such a record when leaving graduate school.

23. Women should not be discouraged from pursuing careers in college teaching by the apparent discrimination in the academic profession. To some degree the lower salaries paid to women professors, the lesser academic appointments in terms of both academic rank and institutional prestige, and the higher teaching loads reflect the fact that, on the average, women are not as qualified and as committed to an academic career as are men. The woman who is willing not to place constraints such as "I must confine the jobs I consider to within commuting distance of my husband" may expect to receive virtually the same recognition as would a man who had the same achievements.

APPENDIX

METHODOLOGICAL APPENDIX

In determining the universe of professors relevant in a mobility study, and the nature of the sample to be drawn from the universe, several important methodological questions need to be resolved. The answers to these questions determine the persons to whom the questionnaires are sent.

Definition of the universe. Our intent was to study behavior in the academic labor market. Because theirs is the most recent contact with the market, and therefore the most likely to be remembered, the experiences of professors who have newly arrived at their jobs are collected through the questionnaires. The universe is all professors who were newly hired for the academic year, 1964-65.

By "professors" is meant "all full-time faculty who are responsible for teaching at least one hour of degree credit courses per term." Part-time faculty (persons receiving fractional compensation) are not included, though temporary faculty (persons receiving full pay who are on one year or terminal appointments) are. Since they are more graduate students than faculty, a special exclusion is full-time faculty who are teaching at the same institution where they are currently working on a degree. Academic administrators (who have no teaching responsibilities) and full-time researchers are not included.

By "newly hired" is meant all persons added to the payroll of a particular institution. Thus, a man who moves from the University of Missouri to the University of Maine is "newly hired," though he is not a new college teacher in the sense that he has never taught in college before. To generalize, a man's previous job is irrelevant to his inclusion in the universe.

Realizing that their methods and motives in mobility are not always self-initiated, two groups of persons are arbitrarily excluded: professors who are on active military duty such as R.O.T.C. professors and unsalaried members of a religious order.

The universe is further restricted to professors in accredited 4-year institutions of higher education in the United States, as listed in the Education Directory, 1963-64 of the U.S. Office of Education. Professors in certain professional schools -- including law, medicine, dentistry, nursing, and pharmacy -- are excluded from the universe in the belief that behavior in the markets for these personnel differs substantially from behavior in the markets for arts and sciences faculty.

So limited, the universe includes 28,700. This is approximately one-sixth of all professors. That is, one-sixth of all professors are serving their first year at a new job.

The 28,700 figure is derived from counting the names of all newly hired faculty as they were returned by college presidents in response to our request. Actually, the 28,700 figure is an estimate. Ninety-five percent of the college presidents responded to our letter requesting a list of the names of new appointees. To estimate the number of newly hired professors by the non-responding schools, the name count was increased by 3.7%, for the total number of students in the non-responding schools is 3.7% of all students in the responding schools (as listed by the American Council on Education in American Colleges and Universities, 1964). This estimating procedure rests upon the implicit assumptions that the ratio of the faculty to students is similar in the two groups of schools (responding versus non-responding) and that turnover rates are also similar.

Sampling procedure. Each name was placed in a sub-set, the sub-sets being defined by the professors' type of employer and field of specialization.

Stratified sampling was used. In fact, two different samples were drawn. The first was "balanced" (by discipline) and is used by far the most frequently. It was drawn by mailing a questionnaire to every sixth name appearing on the lists of new appointments from 4-year college presidents and to every fifth name from the lists submitted by university presidents. The larger sampling ratio for university faculty was necessitated by the smaller size of the group when professional school faculty were excluded. The relative size of the faculty at colleges (4-year institutions without graduate programs) versus universities was estimated from COLFACS data.

The second sample was an extension of the first. All persons included in the first sample were also included in the second. But the first sample was too small to allow rigorous analyses in disciplinary detail. There were too few economists, too few electrical engineers, and so forth. It was, therefore, necessary to draw a supplementary sample for selected disciplines.

Due to a special grant from the National Science Foundation, questionnaires were sent to all members of the universe in the natural and social sciences (excluding the 3.7% of all faculty whose college presidents did not reveal their new appointments). In the humanities, supplementary sampling was pursued for English, history, French, elementary education, physical education and music -- disciplines chosen because the number that naturally fell within the balanced sample was already large and the supplementary need was small. With the supplementary sampling, questionnaires were sent to 40% of English professors; 60% of the professors in music, history, and physical education; and 100% in French and elementary education. Again, the variations in sampling percentages reflect size differences in the discipline-specific universes, as estimated from data on all full-time faculty from COLFACS.

Rate of return and response error. Two questionnaires were sent out: the first to college presidents requesting the names of new appointees, and the second to the new appointees asking about their experiences in the academic labor market.

The response to the presidential questionnaire was very high, roughly 95%. Moreover, the non-response was rather evenly distributed throughout the system of higher education, as shown by Table 1. There are no statistically significant variations

Table 1. Response by Presidents, by the Characteristics of their Institutions

CHARACTERISTICS**	NUMBER RESPONDING	NUMBER NOT RESPONDING	PERCENTAGE RESPONSE
Control of School:			
Public	358	19	95.0%
Private	1029	49	95.5
Region of School:			
North Atlantic	439	15	96.7%
Great Lakes and Plains	403	22	94.8
Southeast	285	18	94.1
West and Southwest	264	12	95.7
Level of School*			
College	1171	61	95.0%
University	215	8	96.4

Source: Survey data.
*/ Junior college: 92%.
**/Two factors included in Table 2 are not included here because the size distribution of schools and the quality ratings of schools could not be identified without considerable effort.
s/ means significant difference by subtype at cho-square at .05. The absence of an "s" means that there are no significant differences.

in the rate of response when the institutions represented by the presidents are divided by method of financing, region, or level. Because of the originally very high response rate, and the substantial similarity between the group of non-responding institutions and responding ones, we can be reasonably confident confident that there is little bias in our response which stems from an atypical list of names of new appointees.

Although over 70% of the sampled new appointees returned questionnaires, the response was neither as high nor as balanced as that of the college presidents. See Table 2. On the basis of information supplied by the presidents it is possible to identify the non-respondents by field of specialization and certain employer characteristics and compare them to the respondents. When grouped by control of employer (public versus private), region of employer, size of employer, and disciplinary specialty, the respondents and non-respondents are not significantly different. The response was equally high from small schools and large, public schools and private, scientists and humanists. There is one point, however, where our results may be slightly biased by the nature of the response: professors from the high prestige universities were slightly more reluctant to respond than others. For example, the rate of response from IHE's in the top 20% of the prestige hierarchy was only 65.2%, compared to slightly over 70.0% in all other categories. In order to allow compensation from bias along these lines, our results throughout the volume are often broken down according to the prestige of the professors' employers.

With one exception noted in the above paragraph, the sample of questionnaire response appears to be typical of the universe.

Other comments, relevant to methodology and technique are included on pages 11 through 15 in Chapter I.

Table 2. Response by Individuals, by the Characteristics of their Employers and by their Specialties*

CHARACTERISTIC	NUMBER RESPONDING	NUMBER NOT RESPONDING	PERCENTAGE RESPONSE
Control of school:			
Public	4435	1191	71.2%
Private	2860	1131	71.7
Region of school:			
North Atlantic	2082	945	68.8%
Great Lakes & Plains	2197	814	73.0
Southeast	1475	558	72.6
West and Southwest	1642	599	73.3
	396		
Level of school:^{s}			
College	3474	1266	73.1%
University	3727	5384	69.2
Size of school:			
Under 1000 students	1049	425	71.2%
1000-5000 students	3216	1248	72.0
Over 5000 students	2595	1088	70.5
Quality of school:^{s}			
Top 20%	509	272	65.2%
20%-40%	1234	493	71.5
40%-60%	1420	508	73.7
60%-80%	1513	629	70.6
80%-100%	1823	702	72.2
Discipline of Individual:			
Sciences	3630	1142	76.1%
Humanities	2387	684	77.7
Social Sciences	1167	437	72.8

Source: Survey data and Prestige Index (explained in another appendix).

*/ The numbers in blocks do not always add to the same totals because it was easier to identify the (say) region of the school of an individual than the (say) prestige of his school.

s/ means significant difference by chi-square at the .05 interval of confidence.

APPENDIX ... THE PRESTIGE OR QUALITY PER STUDENT INDEX

Not all of the 4-year colleges and universities in the United States hold equal stature. Quality differences are substantial. There are a few, such as Harvard and Yale and the University of Chicago, which stand above all others in their ability to command respect. Caplow and McGee have dubbed these as "major league" institutions. Beyond these, another 25 or 30 schools are very highly respected and generally reputed to produce the highest quality of students and research. The names of these schools are recognized by all and respected by most. Following Berelson, we might think of these schools as roughly approximating that portion of the membership of the Association of Graduate Schools that are not included in the first mentioned group, though for our purposes it would be necessary to add some high quality schools which are solely undergraduate.[1] There are another 100 or so institutions whose reputations are widely known and which are viewed with respect. Beyond this there are many institutions which enjoy good reputations locally, but which rarely reach national eminence. And, finally, there are large numbers of marginal and sub-marginal institutions which, rightly or wrongly, are thought to be staffed by underqualified faculty and attended by students who cannot get in better schools.

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1. Bernard Berelson, Graduate Education in the United States (New York: McGraw-Hill Book Co., Inc., 1960), p. 280.

The American System of Higher Education is eclectic. No attempt has been made to equalize the merit of the various units of the system. Each type of school, each quality level, is thought to have its place in the system; and all levels are thriving at the present time.

That institutions vary in quality is commonly agreed. But when one is faced with the task of identifying the good and the bad, as we were, disagreements are sure to arise. No matter what basis is used for rating institutions, a substantial group will argue for the inappropriateness of the measure used, and rightly so. Harvard does not want to be rated on its success in providing a place to go to school for young people within a 50 miles radius of the campus, whereas a city-owned community college would regard this statistic as an important index of the school's "success." And rating the community college on the basis of the number of scholarly publications by its faculty would be inappropriate, though Harvard would feel this index to be far more appropriate than the first. One of the major problems in rating institutions is that their objectives vary and that a rating system that is appropriate for schools with one set of objectives is almost certain to be inappropriate for another set of schools.

The index that we have chosen to use, which undoubtedly does not place all institutions in their best light, is meant to be a measure of "quality per student" and the stature of institutions in the eyes of the scholarly community. Stature is most relevant to this study. As developed in Chapter 19, professors seek out prestigious institutions. For many professors, institutional prestige takes on a significance in job choice that is reserved for monetary reward in most other professions. Even when recognizing the risks involved, it is extremely desirable to have an "objective" measure of institutional prestige. How good an institution is thought to be by candidates qualified to teach at the college level is the rating we thought to be most appropriate for this study.

We are not attempting to measure the extent to which the college succeeds in serving the community, in which case we might have selected as indexes the number of extension programs and the percentage of students of college age in the area who are enrolled in the school. Nor are we attempting to measure the quality of the student body, in which case the average scores on the College Board Entrance Examinations or the number of National Merit Scholars might have been appropriate. The extent to which a school produces college teachers, as measured by the percentage of students continuing on to graduate school or the number of national scholarship winners is not the statistic needed. What we are attempting to measure is stature and prestige. Although the quality of the student body influences the extent to which a school enjoys prestige, it is not the only determinant.

The ideal measure of "institutional prestige in the eyes of scholars" would be to ask all scholars to rate all schools in the country. Because the various departments within universities and colleges are likely to vary, it would probably be desirable to divide all answers on the basis of each discipline. Unfortunately, to have undertaken such a survey would have been well beyond the scope of this study.[2]

A close approximation of such a rating can be achieved by studying the factors that determine institutional prestige, that allow a school to become prestigious. Although not all of these factors are identifiable, and some of those which can be identified cannot be quantified, many of them are subject to measurement. The index used herein is based upon up to eight such factors.[3] The overall prestige rating represents the unweighted mean of the ratings received on each of the eight factors. Each institution is ranked against all other institutions on each of the factors; thus, for each variable an institution may receive a rank between 1 and 1121, with the lower rank representing the better school. By averaging these eight individual ranks, an overall rank, or composite rating, is obtained for each school. The schools with the lowest average ranks are the top-rated.

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2. For schools with graduate departments, the American Council on Education under the supervision of Allan Cartter has recently completed a survey which, in essence, asked the department chairmen at over 100 institutions with graduate programs to rank the top 30 institutions in their disciplines. These ratings were developed for more than 20 disciplines. Besides the problem of gaining access to confidential data, these ratings are not appropriate for this study because they include only 30 out of over 1,000 schools and because they reflect the attitudes of a non-random minority of the profession.

The American Council on Education has also recently computed composite ratings for all predominantly undergraduate 4-year colleges. At the time the ratings were needed, this author could not gain access to them, and it was therefore necessary to devise separate ratings. The ratings devised have the advantage of including universities on the same scale as colleges, though this presents some problems. The A.C.E. composite are based on only five factors: income per student, library expenditures per student, percentage of baccalaureates who subsequently earn the doctorate, percentage of faculty with doctorate, and faculty salary. The methodology used by the A.C.E. in this study was known to this author and proved to be quite helpful in developing the index cited herein.

3. An average rank, or composite rating, was computed where at least four of the eight factors were known.

According to their average ranks, the colleges and universities are divided into six groups. The total number of faculty employed by the schools in each group represents a certain percentage of all faculty in all groups. The schools in Group A employ 10% of all faculty. The 28 schools with the lowest average ranks account for 10% of all faculty appointments, even though they represent only about 2.5% of all IHE's. The schools in Group B also account for 10% of all faculty. These schools have average ranks which are not quite low enough to place them in Group A but are not so high as to place them in Group C. Groups C, D, E, and F each account for 20% of all faculty positions. These data are summarized in the table below.

GROUPINGS BY PRESTIGE INDEX

Group No.	No. of Instns. in Group	% of All Faculty in Group[a]	% of All Instns. in Group	Range of Average Ranks for Group
A	28	10% (Top 10%)	2.4%	22-142
B	47	10 (Next 10%)	4.2	142-233
C	134	20 (20%-40%)	12.1	233-372
D	201	20 (40%-60%)	17.9	372-509
E	283	20 (60%-80%)	25.2	509-639
F	428	20 (80%-100%)	38.2	639-1009
TOTAL	1121	100%	100.0%	

Source: Computed from data published by the American Council on Education, American Universities and Colleges (9th Edition; Washington, D.C.: A.C.E., 1964) and by the American Association of University Professors, "The Economic Status of the Profession, 1962-63: Report on the Self-grading Compensation Survey," AAUP Bulletin, vol. 49, no. 2 (Summer, 1963).

[a] All faculty refers to the total number of persons on the faculty, not the number of new hires.

The eight factors on which institutions are ranked are the following:

1. Percentage of faculty with Ph.D.'s;
2. Average compensation (salary and fringe benefits) per faculty member;
3. Percentage of students continuing to graduate school;
4. Percentage of students studying at the graduate level;
5. Number of volumes in library per full-time student;
6. Total number of full-time faculty members;
7. Faculty-student ratio; and
8. Total current income per student.

A priori we would expect that each of these factors would influence the quality and therefore the stature of an institution. The Ph.D. is a widely accepted measure of faculty quality which is used by many accrediting agencies. Though it is not a guarantee, the Ph.D. is a conspicuous sign that a man has been exposed to and to some extent absorbed the substantive material of a given discipline. The Ph.D. also indicates that a man has shown some ability to pursue original research and to communicate the results of this research to other members of his chosen profession. The man who has earned the Ph.D. has been exposed to the content of his field on the graduate level and, it is usually safe to assume, knows the material that he is to teach.[4]

Now that the AAUP has given wide publicity to academic salaries, there is prestige per se in paying well. Also, to the extent that salaries influence mobility by attracting faculty, the better paying schools will be able to draw more candidates to a given job and may, therefore, make more discriminating judgments on non-economic bases. Other things equal, the better paying schools will attract better faculty.[5]

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[4] Measure 1 is computed as number of Ph.D. holders divided by total number of faculty. Numerator and denominator include part-time faculty and weight them equally with full-time faculty. All data are from American Council on Education, American Universities and Colleges, 1964.

Unfortunately, some very good schools received unjustifiably low ranks on this variable because in the report to A.C.E. they included graduate student instructors (who do not have Ph.D.'s) as full-fledged faculty. Perhaps the worst case of this is the University of California at Berkeley, where virtually all full-fledged faculty members must have Ph.D.'s in hand before being hired. By including graduate student instructors, the percentage of Ph.D.'s on the faculty reported to the A.C.E. is only 77.1%, which places Berkeley 52nd. In contrast, at Harvard the Ph.D. is a necessary prerequisite to being reported as faculty to the A.C.E. so that 100% of Harvard's faculty have Ph.D.'s.

A second, though less serious, limitation of the Ph.D. measure is that some men are not teaching in the field where

A conspicuous indication of the quality and orientation of the student body is the percentage of students continuing into graduate school.[6] This statistic is especially significant for scholars, for some portion of the impression one gains about a school comes from who the students are and what they do. A school which produces a high percentage of its products for the graduate schools, where the opinion-influencing scholars tend to be located, is almost certain to enhance its image in the eyes of these scholars, and thereby increase its own stature.

The presence of a graduate school and graduate students almost certainly augments the stature of an institution of higher learning. Regardless of actual fact, the presence of a graduate program is usually regarded as an indication that a school has the staff qualified to teach in such a program, which means a relatively well qualified staff. Also, the institution which grants graduate degrees has an opportunity to influence the people voting in the opinion polls. Some of the scholars who form opinions on the relative stature of various schools are home-products. Again, most graduate faculties are expected to publish, and publications increase the prestige of both the publisher and his employer.[7]

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they received their Ph.D.'s. This is especially true of doctorates received in education. An Ed.D. might be teaching physics even though his training is in general science.

5. Measure 2, average compensation for full-time faculty 1962-63, includes for all ranks both salaries (adjusted to 9-month basis when necessary) and fringe benefits. The statistics are taken from AAUP, "The Economic Status of the Profession, 1962-63: Report on the Self-grading Compensation Survey," AAUP Bulletin, vol. 49, no. 2 (Summer, 1963). Compensation data were available for 598 schools. An adjustment was made so that this ranking scale had the same range as the others.

6. Measure 3 is a statistic quoted by each school's top administrators as reported in A.C.E., American Universities and Colleges, 1964.

7. Measure 4 is computed as the ratio of graduate students to undergraduate students. Counted as students are all full-time students and 40% or all part-time students. The statistic is taken from A.C.E., American Universities and Colleges, 1964.

A commonly regarded prerequisite to good education and good research is adequate facilities, and the most important facility in most disciplines is the college library. Stature-producing research is unlikely without a good library. It is for this reason that a measure of the size of the library was included in the composite prestige index.[8]

Sheer size also may be expected to be a determinant of stature. The larger universities have more faculty members, more students, and more chances for fame. Other things equal, more publications will come out of large schools because there are more people to publish. Also, at a large school specialization is more possible and more probable. And specialization has academic respectability; generalization of interests does not.[9]

Because it is commonly believed to influence the overall quality of the educational service, the faculty-student ratio has also been included in the composite index of quality-stature. When there are relatively few students per faculty member, this allows both for the closer contact between students and their mentors and for greater time for faculty research. When faculty members are relatively numerous, it is usually more feasible to free the faculty for research leaves and the like.[10]

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[8] Measure 5 is computed as the ratio of volumes in the school library to number of students. Students are here measured in full-time equivalents. Data are from A.C.E., American Universities and Colleges, 1964.

Proximity to a good library would have been a better measure, but these data were not used for obvious reasons.

The decision to divide the total volumes in the library by the number of students cannot be justified when one thinks of measure 5 alone. Clearly, it is the total number of volumes in the library, not the volumes per student, that is most important to the researcher; and to the student also total volumes are probably more important than volumes per. By the measure used, most of the top-ranking libraries are respectable libraries in institutions with small student bodies, though Yale and Harvard rank 5th and 6th.

The division by the number of students was made as a mechanical adjustment to insure that not all of the top-rated schools would be the large multiversities, that good liberal arts colleges such as Amherst and Williams would not automatically be eliminated from the possibility of gaining the top composite rating because of their small size.

[9] Measure 6 is computed as the number of full-time faculty and their equivalents. Data are from A.C.E., American Universities and Colleges, 1964.

[10] Measure 7 is computed as full-time equivalent faculty divided by full-time equivalent student enrollment. Data are from A.C.E., American Universities and Colleges, 1964.

Income per student, the last element in the composite index is included as a general indication of the extent to which a college can afford the luxuries that often enhance stature. Besides a library, low teaching loads, high faculty compensation, and low faculty-student ratios, money can buy captive journals, monograph series, outside lecturers, laboratory facilities, secretarial staff, computer facilities, and many other items which may influence both directly and indirectly the stature of an institution.[11]

Each of the above factors is thought to influence stature, each in a slightly different manner. When taken alone, no one of the factors adequately reflects the complex entity, stature. But when taken together, the factors, as summarized in the composite index present a reasonably accurate picture. Injustices occur, but they are not frequent enough to destroy the usefulness of the measure.

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11. Measure 8 is computed as educational and general income divided by the full-time equivalent student enrollment. Data are from A.C.E., American Universities and Colleges, 1964.

GROUP A. (Top 10%)

Amherst College
Brown Univ.
Bryn Mawr College
Univ. of Calif. at Berkeley*
California Inst. of Tech.**
The Univ. of Chicago**
Claremont Graduate School
  and Univ. Center
Columbia Univ.**
Cornell Univ.**
Dartmouth College
Duke Univ.
Harvard Univ.**
Haverford College
Johns Hopkins Univ.
Mass. Inst. of Tech.**
Univ. of Pennsylvania
Princeton Univ.**
Rice Univ.
Univ. of Rochester
Stanford Univ.
Swarthmore College
Union College and Univ.
Vanderbilt Univ.
Wesleyan Univ.
Western Reserve Univ.
Williams College
Yale Univ.**
Yeshiva Univ.

GROUP B. (10-20%)

Bowdoin College
Univ. of California at Davis
Univ. of California at Riverside
Univ. of California at San Diego
The Catholic Univ. of America
Claremont Men's College
Clark Univ.
Colgate Univ.
Emory Univ.
Hamilton College
Harvey Mudd College
Howard Univ.
Univ. Of Illinois **
State Univ. of Iowa
Kenyon College
Lehigh Univ.
Loma Linda Univ.
State Univ. of New York at
  Stoneybrook
New York Univ.
Univ. of North Carolina at
  Chapel Hill
Univ. of Notre Dame
Oberlin College
Univ. of Oregon
Univ. of Pittsburgh
Pomona College
The Principia College
Reed College
St. John's College, Md.
Scripps College
Smith College
The Univ. of the South
Univ. of Southern California
Trinity College (Conn.)
Tufts Univ.
Tulane Univ.
Vassar College
Univ. of Va.
Washington & Lee Univ.
Wellesley College
Woodstock College

GROUP C. (20-40%)

Univ. of Alaska
Alfred Univ.
Antioch College
Atlanta Univ.
Austin College
Bard College
Barnard College
California State College at Haywood
Carleton College
Carnegie Institute of Tech.
Case Inst. of Tech.
Chatham College
Colby College
The Colorado College
Connecticut College
Cornell College
Davidson College
Univ. of Delaware
Denison Univ.
Univ. of Denver
Dickinson College
Earlham College
Finch College
Franklin and Marshall College
The George Washington Univ.
Georgetown Univ.
Goddard College
Goucher College
Grinnell College
Hiram College
Hollins College
Univ. of Idaho
Indiana Univ.
Iowa State Univ. of Science and Tech.
Kalamazoo College
Univ. of Kansas
Univ. of Kentucky
King College (Tenn.)
Knox College
Lafayette College
Lawrence College (Wis.)
Le Moyne College (N. Y.)
Lincoln Univ. (Pa.)
Lousiana State Univ. and A. and M. College
Univ. of Louisville
Loyola Univ. of Los Angeles
Marquette Univ.
The Univ. of Michigan**
Middlebury College
Mills College
Milwaukee-Downer College
Univ. of Minnesota
Univ. of Missouri at Kansas City
Mount Holyoke College
Mt. St. Mary's College (Md.)
Nazareth College of Kentucky
Univ. of Nebraska
Univ. of Nevada
Univ. of New Hampshire
Univ. of New Mexico
New Mexico Highlands Univ.
New York State Univ. College at Genesco
Northwestern Univ.
Notre Dame College (Mo.)
Occidental College
The Ohio State Univ.
Ohio Wesleyan Univ.
The Penn State Univ.
Pepperdine College
Purdue Univ.
Randolph-Macon Woman's College
Univ. of Redlands
Rensselaer Polytechnic Inst.
Ripon College
Rockford College
Rutgers--The State Univ.
St. Joseph College (Conn.)
St. Lawrence Univ.
St Louis Univ.
St. Mary College (Kan.)
St. Patrick's College
Univ. of San Diego College for Men
San Francisco College for Women
Univ. of Santa Clara

Sarah Lawrence College
Shimer College
Sonoma State College
Southern Methodist Univ.
Southwestern at Memphis
Stanislaus College
Sweet Briar College
Univ. of Tennessee
U. S. Military Academy
Upland College
Utah State Univ.
Univ. of Vermont
Wabash College
Wake Forest College
Univ. of Washington
Washington & Jefferson College
Washington State Univ.
Washington Univ. (Mo.)
Wells College
Western Maryland College
Westminster College (Mo.)
Wheaton College (Ill.)
Wheaton College (Mass.)
Whitman College
William Woods College
Univ. of Wisconsin **
The College of Wooster
Univ. of Wyoming

GROUP D. (40-60%)

Agnes Scott College
Albion College
Allegheny College
Alma College
The American Univ.
Andrews Univ.
Annhurst College
Arizona State Univ.
Univ. of Arkansas
The Athenaeum of Ohio
Atlanta Union College
Barat College of the Sacred Heart
Beloit College
Berea College
Bethany College (W. Va.)
Bethel College (Minn.)
Biola College
Blackburn College
Bluffton College
Boston College
Bowling Green State Univ.
Brandeis Univ.
Bucknell Univ.
Univ. of California at Los Angeles
Univ. of California at San Francisco
Cardinal Stritch College
Carroll College (Wis.)
Cascade College
College of Charleston
Chico State College
Univ. of Cincinnati
Coe College
Univ. of Colorado
Colorado State College
Colorado State Univ.
Concordia Senior College
Creighton Univ.
De Pauw Univ.
Doane College
Dominican College
Dominican College of San Rafael
Fisk Univ.
Univ. of Florida
Florida State Univ.
Fordham Univ.
Fresno State College
Furman Univ.
Gallaudet College
George Fox College
George Williams College
Gettysburg College
Gordon College and Gordon Divinity School
Hamline Univ.
Hampden-Sydney College
Hampton Inst.
Hanover College
Univ. of Hawaii

Heidelberg College
Hendrix College
Hobart & William Smith Colleges
College of the Holy Cross
College of the Holy Names
Hood College
Huntingdon College (Ala.)
Huntington College (Ind.)
Illinois Inst. of Tech.
Illinois State Univ. at Normal
Immaculate College
Immaculate Heart College (Calif.)
Juniata College
Kansas State Univ.
Keuka College
La Grange College
Lake Forest College
La Sierra College
Lindenwood College
Los Angeles Pacific College
Loyola Univ. (Illinois)
Loyola Univ. (La.)
Macalester College
MacMurray College (Ill.)
Univ. of Maine
Mary Rogers College
Univ. of Maryland
Marymount College (Calif.)
Marymount College (Kan.)
Marymount College (N. Y.)
Univ. of Massachusetts
Mercer Univ.
Messiah College
Univ. of Miami (Ohio)
Michigan State Univ.
Univ. of Mississippi
Univ. of Missouri
Monmouth College (Ill.)
Montana State Univ.
Moravian College
Morehouse College
Mt. Mercy College (Pa.)
College of Mt. St. Vincent
Muhlenberg College
Nazareth College (Mich.)
New Mexico State Univ.
(N. Y.) State Univ. College at Brockport
(N. Y.) State Univ. College at Fredonia
(N. Y.) State Univ. College at New Paltz
(N. Y.) State Univ. Maritime College
State Univ. of N. Y., at Buffalo
Newton College of the Sacred Heart
N. C. State of the Univ. of North Carolina at Raleigh
North Central College (Ill.)
Northland College
Oakland College
Oakwood College
Univ. of Oklahoma
Oregon State Univ.
Univ. of the Pacific
Paine College
Park College
Parsons College
Phillips Univ.
Randolph-Macon College
Regis College (Mass.)
Univ. of Rhode Island
Rivier College
Rocky Mountain College
Rollins College
Rose Polytechnic Inst.
St. Bernard College
St. Edward's Univ.
St. Francis College (Ind.)
St. John's College (Calif.)
St. Joseph's College (Ind.)
College of St. Mary of the Springs
St. Mary College (Ind.)
St. Mary's College (Minn.)
St. Mary's College of California
St. Mary's Dominican College
St. Mary's Univ. of San Antonio
St. Olaf College
St. Procopius College
College of St. Scholastica
College of St. Teresa
St. Vincent College
St. Xavier College
Salem College (N. C.)
Univ. of San Diego College for Women

Siena Heights College (Mich.)
Simmons College
Simpson College
Skidmore College
Univ. of South Dakota
Southern Illinois Univ.
Southwestern Univ. (Texas)
Stetson Univ.
Syracuse Univ.
Talladega College
Torkio College
Temple Univ.
Univ. of Texas
Texas A. & M. College
Transylvania College
Trinity College (D. C.)
Trinity Univ. (Texas)
The Univ. of Tulsa
U. S. Coast Guard Academy
U. S. Naval Academy
Ursinus College
Univ. of Utah
The Virginia Military Inst.
Virginia Polytechnic Inst.
Warner Pacific College
Washington College (Md.)
Wesleyan College (Ga.)
Western College for Women (Ohio)
Western Washington State College
Westminster College (Pa.)
Westmont College
Wheeling College
Willamette Univ.
The College of William & Mary in Virginia
Wittenberg

GROUP E. (60-80%)

Adelphi Univ.
Univ. of Alabama
Alabama College
Albertus Magnus College
Albright College
Anderson College & Theol. Sem.
The Univ. of Arizona
Arizona State College
Augustana College (Ill.)
Avila College
Baker Univ.
Baldwin-Wallace College
Barber-Scotia College
Barrington College
Bates College
Baylor Univ.
Beaver College
Belhaven College
Belmont Abbey College
Bennett College
Bethel College (Kan.)
Birmingham-Southern College
Blue Mountain College
Boston Univ.
Brenau College
Bridgewater College
Butler Univ.
Univ. of California at Santa Barbara
California Baptist College
California Lutheran College
California Western Univ.
Canisius College
Capital Univ.
Carthage College
Catawba College
Catherine Spalding College
Cedar Crest College
Central College (Iowa)
Central Methodist College
Central Michigan Univ.
Central State College (Ohio)
Central Washington State College
Centre College of Kentucky
Chadron State College
Chapman College
Chestnut Hill College
Clarke College
Clemson Univ.
Coker College
Colorado Woman's College

Columbia Union College
Concordia College, St. Paul
Univ. of Connecticut
Converse College
Coppin State College
Univ. of Dallas
Davis & Elkins College
Delaware Valley College of Science & Agriculture
Drury College
Univ. of Dubuque
Duchesne College of the Sacred Heart
Dumbarton College of Holy Cross
D'Youville College
East Texas Baptist College
East Texas State College
Eastern Illinois Univ.
Eastern Mennonite College
Eastern New Mexico Univ.
Eastern Washington State College
Edgewood College of the Sacred Heart
Elmhurst College
Elmira College
Emory & Henry College
Eureka College
Fenn College
Fort Wright College of the Holy Names
Franklin College of Indiana
Geneva College
The Univ. of Georgia
Georgia Inst. of Tech.
Georgia State College
Georgian Court College
Good Counsel College
Goshen College
Greensboro College
Gustavus Adolphus College
Harding College
Hastings College
Hofstra Univ.
Holy Family College (Pa.)
Holy Family College (Wis.)
Hope College
Houghton College
Univ. of Houston
Howard College
Humboldt State College
Idaho State Univ.
Illinois College
Illinois Wesleyan Univ.
Incarnate Word College
Indiana Central College
Indiana State College
State College of Iowa
Iowa Wesleyan College
John Brown Univ.
Johnson State College
Kansas State College of Pittsburgh
Kent State Univ.
Kentucky Wesleyan College
Lake Erie College
Langston Univ.
La Verne College
Lebanon Valley College
Lewis & Clark College
Lincoln Memorial Univ.
Linfield College
Livingstone College
Lock Haven State College
Long Beach State College
Longwood College
Loras College
Los Angeles State College of Applied Arts & Science
Louisiana Polytechnic Inst.
Loyola College (Md.)
Manchester College
Manhattan College
Mary Baldwin College
Mary Hardin-Baylor College
Mary Washington College of the Univ. of Virginia
Marygrove College (Mich.)
Maryhurst College
Marymount Manhattan College
Maryville College (Tenn.)
Maryville College of the Sacred Heart
Mercy College of Detroit
Mercyhurst College
Millersville State College
Milligan College
Mississippi State Univ.
Missouri Valley College
Montana State College
Montclair State College
Mt. Marty College
Mt. St. Agnes College
Mt. St. Mary College (N. H.)
Mt. St. Mary's College (Md.)
Mt. St. Scholastica College

Mt. Union College
Mundelein College
Muskingum College
Nazareth College of Rochester
College of New Rochelle
Brooklyn College of the City Univ. of New York
The City College of the City Univ. of New York
Hunter College of the City Univ. of New York
Queens College of the City Univ. Of New York
(N. Y.) State Univ. College at Buffalo
(N. Y.) State Univ. College at Cortland
(N. Y.) State Univ. College at Oneonta
(N. Y.) State Univ. College at Oswego
(N. Y.) State Univ. College at Plattsburgh
(N. Y.) State Univ. College at Potsdam
State Univ. of New York at Albany
Niagara Univ.
Univ. of North Carolina at Greensboro
Univ. of North Dakota
North Dakota State Univ. of A. & Applied Science
Northern Illinois Univ.
Northern Montana College
Norwich Univ.
College of Notre Dame (Calif.)
College of Notre Dame of Maryland
Oglethorpe Univ.
Ohio Univ.
Oklahoma City Univ.
Oklahoma College for Women
Oklahoma State Univ. of A. & Applied Science
Olivet College (Mich.)
Our Lady of the Lake College
Pace College
Pacific Lutheran Univ.
Pacific Univ. (Oregon)
Pasadena College
Pfeiffer College
Plymouth State College
Univ. of Portland
Presbyterian College
Univ. of Puerto Rico
Queens College (N. C.)
Univ. of Richmond
Roberts Wesleyan College
Roosevelt Univ.
Rosary College
Rosemont College
Sacramento State College
College of the Sacred Heart
Sacred Heart Dominican College
College of St. Benedict (Minn.)
St. Benedict's College (Kan.)
St. Bernadine of Siena College
St. Bonaventure Univ.
The College of St. Catherine
College of St. Elizabeth
St. Francis College
St. John College of Cleveland
St. John Fisher College
St. John's Univ. (Minn.)
St. Joseph College
St. Joseph College of Orange
College of St. Joseph on the Rio Grands
St. Joseph's College for Women
St. Martin's College
St. Mary-of-the-Woods College
St. Michael's College
College of St. Rose
College of St. Thomas
Univ. of St. Thomas (Texas)
Salisbury State College
Salve Regina College
San Diego State College
San Fernando Valley State College
Univ. of San Francisco
San Francisco State College
San Jose State College
Seton Hill College
Shippensburg State College
Univ. of South Carolina
South Carolina State College
Southern Connecticut State College

Southern Missionary College
Southern Oregon College
Springfield College
Stephens College
Sterling College
Stout State College
Suffolk Univ.
Texas Christian Univ.
Texas Woman's Univ.
Thiel College
Tift College
The Univ. of Toledo
Trenton State College
Union Univ. (Tenn.)
U. S. Air Force Academy
U. S. Merchant Marine Academy
Ursuline College (Ky.)
Ursuline College for Women (Ohio)
Villanova Univ.
Virginia State College
Wagner College
Wayland Baptist College
Wayne State College
Webster College
West Virginia Univ.
Western Illinois Univ.
Western Mich. Univ.
Western New Mexico Univ.
Western State College of Colorado
Westminster College (Utah)
Whittier College
Wilberforce Univ.
Wiley College
Wilkes College
William Jewell College
Williamantic State College & Inst. of Tech.
Wofford College
The Women's College of Georgia
Xavier Univ. (Ohio)
Xavier Univ. of Louisiana
Yankton College

GROUP F. (80-100%)

Abilene Christian College
Adams State College of Colorado
Adrian College
Agricultural & Tech. College of North Carolina
Agricultural, Mechanical, & Normal College
The Univ. of Akron
Alabama Agricultural & Mechanical College
Albany State College
Alcorn Agricultrual & Mechanical College
Alderson-Broaddus College
Alliance College
Alverno College
American International College
Anna Maria College for Women
Aquinas College
Arkansas Arricultural & Mechanical College
Arkansas College
Arkansas Polytechnic College
Arkansas State College
Armstrong College
Asbury College
Ashland College
Assumption College
Athens College
Atlantic Christian College
Augsberg College
Augustana College (S. D.)
Aurora College
Austin Peay State College
Barry College
Bellarmine College
Belmont College
Bemidji State College
Benedict College
Berry College
Bethany College (Kan.)
Bethany Nazarene College
Bethel College (Tenn.)
Bethune-Cookman College
Bishop College
Bloomfield College
Bloomsburg State College

Bluefield State College
Bowie State College
Brescia College
Briar Cliff College
Univ. of Bridgeport
Brigham Young Univ.
Buena Vista College
Caldwell College for Women
California State College (Pa.)
California State Polytechnic College
Calvin College
Campbellsville College
Cardinal Glennon College
Carroll College (Montana)
Castleton State College
Catholic Univ. of Puerto Rico
Centenary College of Louisiana
Central Connecticut State College
Central Missouri State College
Central State College (Olk.)
Chaminade College of Honolulu
Univ. of Chattanooga
Cheyney State College
Christian Brothers College
The Church College of Hawaii
The Citadel
Clarion State College
Clark College
Clarkson College of Tech.
College Misericordia
Columbia College
Concord College
Concordia College (Minn.)
Culver-Stockton College
Dakota Wesleyan Univ.
Dana College
Danbury State College
David Lipscomb College
Univ. of Dayton
The Defiance College
Delaware State College
Delta State College
De Paul Univ.
Univ. of Detroit
The Detroit Inst. of Tech.
Dickinson State College
Dilliard State College
Drake Univ.
Drexel Inst. of Tech.
Duquesne Univ.
East Carolina College
East Central State College
East Stroudsburg State Univ.
East Tennessee State Univ.
Eastern Kentucky State College
Eastern Michigan Univ.
Eastern Nazarene College
Eastern Oregon College
Edinboro State College
Elizabethtown College
Elon College
Emerson College
Emmanuel College
College of Emporia
Erskine College
Evansville College
Fairfield Univ.
Fairleigh Dickinson Univ.
Fairmont State College
Ferris State College
Findlay College
Florence State College
Florida A. & M. Univ.
Florida Memorial College
Florida Southern College
Fontbonnie College
Fort Hays Kansas State College
Fort Lewis A. & M. College
The Fort Valley State College
Friends Univ.
Frostburg State College
Gannon College
Georgetown College
Georgia Southern College
Glassboro State College
Glenville State College
Golden Gate College
Gonzaga Univ.
Graceland College
Grambling College
College of Great Falls
Greenville College
Grove City College
College of Guam
Guilford College
Hardin-Simmons Univ.
Univ. of Hartford
Hartwick College
High Point College
Hillsdale College
Howard Payne College
Huron College

Huston-Tillotson College
The College of Idaho
Inter American Univ.
Iowa College
Ithaca College
Jackson College
Jackson State College
Jacksonville State College
Jamestown College
John Carroll Univ.
Johnson C. Smith Univ.
Judson College
Kansas Wesleyan Univ.
Kearney State College
Keene State College
Kentucky State College
King's College
Knoxville College
Kutztown College
Ladycliff College
Lakeland College
Lamar State College of Tech.
Lander College
Lane College
La Salle College
Le Moyne College (Tenn.)
Lenoir Rhyne College
Lesley College
Limestone College
Lincoln Univ. (Mo.)
Little Rock Univ.
Livingston State College
Loretto Heights College
Louisiana College
Lowell Tech. Inst.
Luther College
Lycoming College
Lynchburg College
McMurry College
McNeese State College
McPherson College
Madison College
Madonna College
Mankato State College
Mansfield State College
Marian College (Ind.)
Marian College of Fond du Lac
Marietta College
Marshall Univ.
Mary Manse College
Marycrest College
Maryland State College
Marywood College
Mass. State College at Boston
Mass. State College at Bridgewater
Mass. State College at Fitchburg
Mass. State College at Framingham
Mass. State College at Lowell
Mass. State College at North Adams
Mass. State College at Salem
Mass. State College at Westfield
Mass. State College at Worcester
Maryville State College
Memphis State Univ.
Menlo College
Meredith College
Merrimack College
Michigan Tech. Univ.
Middle Tennessee State College
Midland Lutheran College
Midwestern Univ.
Millikin Univ.
Millsaps College
Minot State College
Mississippi College
Mississippi State College for Women
Monmouth College (N. J.)
Moorhead State College
Morehead State College
Morgan State College
Morningside College
Morris Brown College
Morris Harvey College
Mt. Angel College
Mt. Mary College (Wis.)
Mt. Mercy College (Iowa)
College of Mt. St. Joseph on the Ohio
Municipal Univ. of Omaha
Murray State College
Nasson College
Nebraska Wesleyan Univ.
Newark State College
Newberry College
North Georgia College
North Park College
North Texas State Univ.

Northeast Louisiana State College
Northeastern State College (Okla.)
Northeastern Univ.
Nothern Michigan Univ.
Northwest Christian College
Northwest Missouri State College
Northwest Nazarene College
Northestern State College
Northwestern State College of Louisiana
Notre Dame College (Ohio)
Notre Dame College of Staten Island
Ohio Northern Univ.
Oklahoma Baptist Univ.
Old Dominion College
Olivet Nazarene College
Orange State College
Ottawa Univ.
Otterbein College
Ouachita Baptist College
Our Lady of Cincinnati College
College of Our Lady of the Elms
Pacific Union College
Pan American College
Panhandle A. & M. College
Paterson State College
Pembroke State College
Pennsylvania Military College
Peru State College
Pikeville College
Polytechnic Inst. of Brooklyn
Portland State College
Prarie View A. & M. College
Providence College
Univ. of Puget Sound
Quincy College
Quinnipiac College
Radford College
Regis College (Colo.)
Rhode Island College
Rider College
Roanoke College
Rockhurst College
Rosary Hill College
Russell Sage College
St. Ambrose College
St. Andrew's Presbyterian College
St. Anselm's College
St. Augustine's College
St. Cloud State College
College of St. Francis (Ill.)
St. Francis College (Pa.)
St. John's Univ. (N. Y.)
St. Joseph's College (Me.)
St. Joseph's College (Pa.)
College of St. Mary (Nebr.)
St. Mary of the Plains College
St. Norbert College
St. Paul's College (Va.)
St. Peter's College
Salem College (W. Va.)
Savannah State College
Univ. of Scranton
Seattle Pacific College
Seattle Univ.
Seton Hall Univ.
Shaw Univ.
Shepherd College
Shorter College
Siena College
Sioux Falls College
Slippery Rock State College
Southeast Missouri State College
Southeastern Louisiana College
Southeastern State College
Southern Colorado State College
Univ. of Southern Mississippi
Southern State College
Southern Univ. & A. & M. College
College of Southern Utah
Southwest Missouri State College
Southwest Texas State College
Southwestern College
The Univ. of Southwestern Louisiana
Southwestern State College
Spelman College
Spring Arbor College
Spring Hill College
Stephen F. Austin State College
The College of Steubenville
Stillman College

Stonehill College
Sul Ross State College
Susquehanna Univ.
Univ. of Tampa
Taylor Univ.
Tennessee A. & I. State Univ.
Tennessee Polytechnic Inst.
Tennessee Wesleyan College
Texas College of Arts and Industries
Texas Lutheran College
Texas Southern Univ.
Texas Technological College
Texas Wesleyan College
Texas Western College
Tougaloo College
Towson State College
Trinity College (Vt.)
Troy State College
Tusculum College
Tuskegee Inst.
Union College (Ky.)
Union College (Nebr.)
Upper Iowa Univ.
Upsala College
Valdosta State College
Valley City State College
Valparaiso Univ.
Villa Madonna College
Villa Maria College
Viterbo College
Walla Walla College
Wartburg College
Washburn Univ. of Topeka
Waynesburg College
Weber State College
West Chester State College
West Coast Univ.
West Georgia College
West Liberty College
West Texas State Univ.
West Virginia Inst. of Tech.
West Virginia State College
West Virginia Wesleyan College
Western Carolina College
Westfield State College
Westmar College
Wheelock College
Whitworth College
Wichita State Univ.
William Carey College
William Penn College
Wilmington College
Winona State College
Winston-Salem State College
Winthrop College
Wis. State College At Eau Claire
Wis. State College at La Crosse
Wis. State College at Oshkosh
Wis. State College at River Falls
Wis. State College at Stevens Point
Wis. State College at Superior
Wis. State College at White Water
Woodbury College
Worcester State College
The Youngstown Univ.

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*/Sufficient data were not available to enable the computation of an accurate index. This school is arbitrarily placed in the top group.

**/IHE's in Berelson's "Top 12 universities." When Group A was redefined to include the three institutions in Berelson's Top 12 that do not naturally fall in Group A, the conclusions are not altered.

APPENDIX: THE PRODUCTIVITY INDEX

The productivity index is a measure of the extent to which an individual has published. It is constructed from the answers to the question: "What have you published in the last five years?" (In each of the spaces below write in the appropriate number. If "none," write "0." Include coauthorships.)

(______) Books

(______) Monographs and articles in professional journals. (Do not include material published only for your classes, book reviews, and short notes of less than one page.)

(______) Art pieces, patents, and other creative works of a major nature, especially if exhibited or sold for large sums."

From the answers, the following three categories were formed:
Non-publishers: zero for all categories.
Small publishers: less than ten articles, monographs, and creative works of a major nature.
Big publishers: more than ten articles, monographs, and creative works of a major nature or one or more books.

APPENDIX ....THE SHORTAGE INDEX

To measure the relative excess demand in individual labor markets, a "Shortage Index" has been computed for the 23 disciplines that appear most often in our survey. Though many measures approximate excess demand, no one measure is clearly the best. To overcome some of the shortcomings of the different measures, we have constructed seven tables that rank the disciplines according to characteristics which indicate excess demand. The tables are listed below.

For a statement of the basis for selecting the seven factors, refer to Chapter 5, pages 87-91. For the summary index, the Shortage Index, refer to Table 1 on page 89.

Table A. Starting Salaries of Newly Graduated Ph.D.'s*

DISCIPLINE	STARTING SALARY
1. Electrical Engineering	$9,777
2. Education: Services: Administration	9,191
3. Mechanical Engineering	8,862
4. Civil Engineering	8,768
5. Economics	8,355
6. Mathematics	8,290
7. Counseling and Guidance	8,267
8. Physics	8,255
9. Art	8,000
10. Secondary Education	8,000
11. Physical Education and Health	8,000
12. Biochemistry	7,893
13. Clinical Psychology	7,860
14. Chemistry	7,791
15. Sociology	7,791
16. Political Science	7,625
17. General Biology	7,600
18. Music	7,580
19. Earth Science and Geology	7,570
20. General Zoology	7,484
21. English and Literature	7,469
22. French	7,350
23. History	7,209

Source: Survey data.

*/ These are mean salaries for persons in 4-year colleges and universities.

Table B. Extent of Salary Increase*

DISCIPLINE	STARTING SALARY 1964-65 MINUS AVERAGE SALARY 1962-63
1. Electrical Engineering	$2,037
2. Education: Services: Administration	1,691
3. Mechanical Engineering	1,362
4. Counseling and Guidance	1,117
5. Mathematics	1,050
6. Economics	995
7. Music	970
8. Art	910
9. Secondary Education	900
10. Civil Engineering	898
11. Physics	865
12. Physical Education and Health	850
13. General Biology	580
14. English and Literature	539
15. Chemistry	481
16. Sociology	451
17. History	359
18. Earth Science and Geology	280
19. Clinical Psychology	260
20. Political Science	195
21. French	150
22. General Zoology	84
23. Biochemistry	-270

Source: Survey data and COLFACS Study.

*/ Starting salary (1964-65) for student Ph.D.'s only minus mean salary (1962-63) for assistant professors only.

Table C. Average Salaries Paid to Full Professors in 1962-1963

	DISCIPLINE	AVERAGE SALARY
1.	Education: Services: Administration	$12,598
2.	Clinical Psychology	12,001
3.	Political Science	11,907
4.	Mechanical Engineering	11,800
5.	Earth Science and Geology	11,707
6.	Electrical Engineering	11,700
7.	Physics	11,611
8.	Civil Engineering	11,075
9.	Economics	11,054
10.	Mathematics	10,942
11.	Sociology	10,605
12.	Chemistry	10,565
13.	History	10,374
14.	Biochemistry	10,200
15.	General Zoology	10,096
16.	English and Literature	10,070
17.	Art	10,000
18.	Physical Education and Health	10,000
19.	Music	9,917
20.	French	9,605
21.	Secondary Education	9,547
22.	General Biology	9,401
23.	Counseling and Guidance	9,005

Source: COLFACS Study.

Table D. Academic Rank of Newly Graduated Ph.D.'s

DISCIPLINE	PERCENTAGE HIRED AT EACH RANK (rows=100%)				
	Instr.	Asst. Prof.	Assoc. Prof.	Full Prof.	Other
1. Electrical Engineering	--	75%	21%	4%	--
2. Counseling & Guidance	--	86	--	14	--
3. Educ.: Services Administration	11%	67	11	11	--
4. Sociology	15	65	15	4	--
5. Civil Engineering	6	75	16	--	3%
6. Economics	3	90	8	--	--
7. Mechanical Engineering	5	90	5	--	--
8. Biochemistry	--	100	--	--	--
9. General Biology	--	100	--	--	--
10. Secondary Educ.	--	100	--	--	--
11. Physical Educ. & Health	--	100	--	--	--
12. Chemistry	16	79	--	4	1
13. Earth Science & Geology	24	57	5	10	5
14. Physics	23	65	6	3	--
15. Mathematics	24	69	4	2	.7
16. Art	33	33	33	--	--
17. General Zoology	12	82	--	--	6
18. Clinical Psych.	13	88	--	--	--
19. Political Science	22	73	6	--	--
20. Music	33	67	--	--	--
21. English & Literature	36	60	--	4	--
22. History	35	58	--	2	2
23. French	40	60	--	--	--

Source: Survey data.

Table E. Unfilled Positions as a Percentage of All Positions, 1961-63

DISCIPLINE	PERCENTAGE UNFILLED
1. Physics	3.20%
2. Mathematics	2.17
3. Sociology	1.70
4. Biology	1.58
5. Chemistry	1.35
6. Electrical Engineering	1.28
7. Economics	1.08
8. Mechanical Engineering	.89
9. French	.78
10. Political Science	.62
11. Guidance & Counseling	.62
12. Civil Engineering	.58
13. English & Literature	.49
14. History	.31
15. General Zoology	.28
16. Art	.24
17. Physical Education & Health	.24
18. Music	.16
19. Biochemistry	.08
20. Earth Science and Geology	.06

Sources: Data on number of unfilled positions are taken from N.E.A., *Teacher Supply and Demand in Universities, Colleges and Junior Colleges, 1961-62 and 1962-63* ("Research Report 1963-R3"; Washington: N.E.A., 1963), pp. 22-23. Data on total number of positions are taken from U.S.O.E., *Preliminary Report on Teaching Faculty in Higher Education, 1962-63: Primary Teaching Areas and Contract Salaries* (Washington: G.P.O., 1963), pp. 6-7.

Table F. Percentage of Newly Graduated Ph.D.'s Entering College Teaching, in 1960-1962

DISCIPLINE	PERCENTAGE ENTERING COLLEGE TEACHING
1. Chemistry	23.5%
2. Physics	29.1
3. Psychology	29.5
4. Earth Science & Geology	31.1
5. General Biology	40.0
6. General Zoology	40.0
7. Mathematics	59.4
8. Art	68.5
9. Economics	70.0
10. Music	70.1
11. Sociology	70.2
12. Political Science	71.2
13. Physical Education & Health	75.1
14. History	84.4
15. English & Literature	89.3

Source: N.E.A., Teacher Supply and Demand in Universities, Colleges and Junior Colleges, 1961-62 and 1962-63 ("Research Report 1963-R3"; Washington: N.E.A., 1963), pp. 80-83. Data are for 4-year colleges and universities.

Table G. Rate of Expansion

DISCIPLINE	EXPANSION DEMAND AS A PERCENTAGE OF ALL HIRING
1. Mathematics	54.3%
2. Mechanical Engineering	53.1
3. Electrical Engineering	52.9
4. Physics	50.0
5. Biochemistry	49.0
6. Clinical Psychology	48.0
7. Chemistry	47.0
8. Education: Services: Admin.	46.5
9. Art	45.8
10. Political Science	45.0
11. Counseling & Guidance	44.0
12. Civil Engineering	42.0
13. Earth Science & Geology	41.4
14. Secondary Education	41.3
15. Economics	39.5
16. Sociology	38.6
17. English & Literature	38.0
18. Physical Education & Health	37.0
19. History	35.0
20. General Zoology	33.0
21. French	31.0
22. Music	30.0
23. General Biology	26.0

Source: Survey data.

APPENDIX ... CHARACTERISTICS OF NEWLY HIRED FACULTY BY DISCIPLINE

BIOLOGICAL SCIENCES

	VARIABLE[1]	Bacteriology #25	Biochemistry #63	Gen. Botany #60	Gen. Biology #43	Microbiology #52	Physiology #116	Gen. Zoology #121
a.	% Ph.D.'s	n.a.	84%	n.a.	17%	n.a.	n.a.	52%
b.	% Emerging Students with Ph.D.'s	n.a.	78%	n.a.	14%	n.a.	n.a.	40%
	Last Year's Activity							
c.	% Students	n.a.	30%	n.a.	33%	n.a.	n.a.	41%
d.	% Faculty	n.a.	25%	n.a.	16%	n.a.	n.a.	43%
e.	% High School and Elementary	n.a.	0%	n.a.	44%	n.a.	n.a.	4%
f.	% Other	n.a.	45%	n.a.	7%	n.a.	n.a.	12%
	Mean Salary (in $)							
g.	Student Ph.D.'s	n.a.	7893	n.a.	7600	n.a.	n.a.	7484
h.	Student non-Ph.D.'s	n.a.	5850	n.a.	5742	n.a.	n.a.	6361
i.	All Faculty	8504	8756	7698	6222	8147	7909	7619
j.	Mean Teaching Load (in hours)	9.3	7.1	10.6	11.5	9.2	9.4	10.0
k.	Mean No. Conventions Attended	1.3	1.0	1.2	1.7	1.7	1.3	1.1
	Publications[2]							
l.	% No Publications	n.a.	14%	n.a.	71%	n.a.	n.a.	42%
m.	% Big Publishers	n.a.	13%	n.a.	10%	n.a.	n.a.	10%
n.	% Remaining Only One Year	n.a.	14%	n.a.	12%	n.a.	n.a.	n.a.
o.	% Who Did Nothing To Find New Job	12%	13%	12%	19%	13%	14%	12%
	Orientation[3]							
p.	Research	n.a.	21%	n.a.	5%	n.a.	n.a.	5%
q.	Teaching	n.a.	49%	n.a.	91%	n.a.	n.a.	86%
r.	% Involuntary Movers	11%	22%	21%	11%	20%	10%	17%
s.	% Teaching and Researching Same Field	43%	45%	73%	74%	53%	53%	63%
	% Appointed Instructors							
t.	All Students	n.a.	7%	n.a.	71%	n.a.	n.a.	48%
u.	Student Ph.D.'s	n.a.	0%	n.a.	0%	n.a.	n.a.	12%
v.	Shortage Index[4]	n.a.	--	n.a.	0	n.a.	n.a.	--
w.	Mean No. Job Options	1.9	1.8	1.6	1.6	1.8	2.5	1.9
x.	Mean Age Emerging Students	n.a.	29.3	n.a.	28.6	n.a.	n.a.	28.9
y.	Job Choice Criterion[5]	RES	RES	RES	LOAD	RES	RES	LOAD

BUSINESS	EDUCATION			ENGINEERING				ENGLISH, FINE ARTS FOREIGN LANGUAGES			
Accounting #62	Elementary Educ. #112	Secondary Educ. #63	Services: Admin. & Super. #71	Chem. Eng. #48	Civil Eng. #88	Elec. Eng. #138	Mech. Eng. #96	Eng. & Lit. #345	Art #72	Music #148	Fr. #143
n.a.	n.a.	40%	54%	n.a.	60%	62%	57%	29%	14%	28%	35%
n.a.	n.a.	36%	69%	n.a.	74%	69%	62%	19%	11%	18%	9%
n.a.	n.a.	19%	24%	n.a.	57%	38%	41%	52%	42%	27%	43%
n.a.	n.a.	31%	30%	n.a.	19%	26%	22%	31%	32%	42%	41%
n.a.	n.a.	42%	28%	n.a.	0%	0%	1%	7%	11%	19%	10%
n.a.	n.a.	8%	18%	n.a.	24%	36%	36%	10%	15%	12%	6%
n.a.	n.a.	8000	9191	n.a.	8768	9777	8862	7469	8000	7580	7350
n.a.	n.a.	8171	7320	n.a.	7664	7256	7933	6665	6686	5896	6419
8168	8216	8026	8774	9887	8778	9452	9009	7076	7161	7414	7859
n.a.	11.9	n.a.	n.a.	6.8	8.8	8.5	9.0	11.3	n.a.	13.6	11.4
0.9	2.0	2.0	n.a.	1.1	0.9	1.0	0.8	0.7	0.7	1.0	0.7
n.a.	n.a.	60%	n.a.	n.a.	43%	29%	36%	70%	11%	64%	70%
n.a.	n.a.	5%	n.a.	n.a.	1%	16%	8%	11%	49%	11%	18%
n.a.	n.a.	5%	21%	n.a.	13%	7%	7%	16%	18%	12%	23%
26%	22%	24%	18%	8%	7%	10%	9%	11%	11%	21%	14%
n.a.	3%	n.a.	n.a.	n.a.	2%	11%	9%	5%	16%	6%	12%
n.a.	90%	n.a.	n.a.	n.a.	86%	71%	72%	83%	62%	84%	75%
16%	6%	6%	n.a.	0%	31%	14%	15%	29%	25%	12%	10%
73%	86%	52%	n.a.	83%	98%	93%	93%	95%	88%	93%	96%
n.a.	n.a.	25%	23%	n.a.	12%	22%	22%	81%	67%	72%	82%
n.a.	n.a.	0%	11%	n.a.	6%	0%	5%	36%	33%	33%	40%
n.a.	n.a.	n.a.	n.a.	n.a.	+	+	+	-	0	-	-
2.2	2.4	2.2	n.a.	3.3	2.2	2.3	2.2	2.6	1.8	1.3	2.1
n.a.	n.a.	32.5	35.2	n.a.	31.0	29.5	28.8	28.0	29.7	28.4	23.0
FUTUR	FUTUR	COURS	n.a.	RES	RES	RES	RES	COURS	COURS	COURS	

		MATHEMATICS AND PHYSICAL SCIENCES				
	VARIABLE[1]	Math #761	Phys. & Health Educ. #156	Chem. #447	Earth Sci. & Geo. #145	Physics #447
a.	% Ph.D.'s	41%	15%	74%	57%	61%
b.	% Emerging Students with Ph.D.'s	38%	2%	62%	43%	49%
	Last Year's Activity					
c.	% Students	53%	31%	34%	39%	42%
d.	% Faculty	25%	35%	22%	26%	25%
e.	% High School and Elementary	9%	26%	4%	2%	3%
f.	% Other	14%	8%	40%	33%	30%
	Mean Salary (in $)					
g.	Student Ph.D.'s	8290	8000	7791	7570	8255
h.	Student non-Ph.D.'s	6453	6364	6542	6783	6652
i.	All Faculty	7935	6866	8151	8389	8854
j.	Mean Teaching Load (in hours)	10.9	10.8	8.8	9.4	8.6
k.	Mean No. Conventions Attended	0.8	1.9	1.1	1.5	1.5
	Publications[2]					
l.	% No Publications	66%	71%	24%	31%	29%
m.	% Big Publishers	6%	8%	9%	20%	16%
n.	% Remaining Only One Year	16%	6%	14%	17%	14%
o.	% Who Did Nothing To Find New Job	13%	17%	11%	21%	16%
	Orientation[3]					
p.	Research	12%	0%	14%	12%	17%
q.	Teaching	71%	89%	69%	74%	61%
r.	% Involuntary Movers	22%	11%	24%	24%	20%
s.	% Teaching and Researching Same Field	97%	99%	96%	90%	93%
	% Appointed Instructors					
t.	All Students	55%	77%	34%	55%	45%
u.	Student Ph.D.'s	24%	n.a.	16%	24%	22%
v.	Shortage Index[4]	+	-	+	0	+
w.	Mean No. Job Options	2.3	1.8	2.2	1.7	2.3
x.	Mean Age Emerging Students	27.7	26.0	27.9	30.3	28.0
y.	Job Choice Criterion[5]	COURS	FUTUR	RES	RES	RES

PSYCHOLOGY			SOCIAL SCIENCES				
Clinical Psych. #102	Experimental Psych. #171	Counseling & Guid. #54	Econ. #357	History #318	Political Science #316	Sociology #345	Anthropology #121
72%	n.a.	59%	41%	55%	53%	45%	n.a.
42%	n.a.	56%	26%	26%	45%	24%	n.a.
24%	n.a.	33%	48%	44%	43%	42%	n.a.
29%	n.a.	37%	34%	43%	41%	43%	n.a.
0%	n.a.	2%	1%	7%	2%	2%	n.a.
47%	n.a.	28%	17%	6%	13%	13%	n.a.
7860	n.a.	8267	8355	7209	7625	7791	n.a.
6771	n.a.	6743	7252	6443	6846	6660	n.a.
8583	8291	8060	8415	7672	7990	7914	8225
9.6	9.1	n.a.	10.3	10.9	10.7	10.6	9.1
1.4	1.6	1.4	0.8	1.1	1.1	1.1	1.1
37%	n.a.	47%	60%	60%	55%	45%	n.a.
20%	n.a.	12%	11%	12%	16%	14%	n.a.
11%	n.a.	20%	19%	16%	18%	16%	n.a.
18%	12%	11%	10%	11%	8%	17%	21%
7%	n.a.	n.a.	14%	11%	11%	13%	n.a.
79%	n.a.	n.a.	68%	71%	71%	73%	n.a.
14%	19%	18%	21%	22%	32%	10%	20%
68%	85%	59%	96%	92%	96%	98%	93%
26%	n.a.	33%	38%	64%	50%	57%	n.a.
12%	n.a.	0%	3%	35%	22%	15%	n.a.
0	n.a.	0	+		0	0	n.a.
2.2	2.0	n.a.	2.7	1.9	2.2	2.3	1.9
29.0	n.a.	33.0	29.6	29.7	29.4	29.8	n.a.
RES	RES	n.a.	COURS	COURS	COURS	COURS	COURS

1/ The #'s under the discipline headings indicate the number of respondents in each discipline.

2/ At least one book or ten journal articles, art objects included.

3/ Based on the answer to the question, "During a typical week do you spend more time 'teaching and counseling' or more time 'researching and writing'?"

4/ Method of computation is explained in the appendix.
(+) means excess demand
(-) means excess supply
(0) means neutral

5/ That one among 17 factors receiving the most "very important" votes:
"RES" means research facilities
"LOAD" means teaching load
"FUTUR" means future salary prospects
"COURS" means courses taught

n.a./ means "not available" or "not applicable" or "sample too small to be statistically meaningful."

Source: Survey data.

APPENDIX...DEFINING LABOR MARKETS BY VECTOR ANALYSIS

by Tom Weiss

"Probably the most heterogeneous commodity of all is human labor. It can be classified roughly for conveneince; but attempts, whether by labor unions or by others, to standardize it rigidly cannot obliterate the fact that each worker has his own particular set of assets and liabilities."[1]

In spite of the forewarning, the following is another attempt to classify labor for convenience. However, it is not intended to set up irreconcilable, mutually exclusive, and totally exhaustive groups. Rather it intends to allow the "groups" to exist in accord with the spectrum of talents available in the laborforce, and in any particular sub-force.

In particular it is an attempt to suggest a possible economic application of mathematical theory, notably vector theory, to the professional labor market.[2] Vector theory is used to define more precisely the suppliers and the demanders in certain labor markets.

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[1] L.Abbott, Quality and Competition (New York: Columbia University Press, 1956), p. 16.

[2] It must be pointed out that the presentation is not a rigorous vector space construction, because it is not meaningful to add and multiply vectors. Nevertheless, we can still use vector space theory to explain the workings of the market.

Mathematical advantage. The entire market process is based upon expected gains and expected costs. Suppliers or demanders limit their markets because they have higher expected costs than gains, particularly if probability is allowed. If knowledge can be increased, if probabilities can be made more certain regarding success, the markets will be widened. Theoretically this will be to the benefit of society.

If our vector theory can serve to indicate the points of vector agglomerations, for both supply and demand, the parties will know in which direction to increase their search, for the larger the concentration of supply or demand, the more likely the opportunity of success. It is merely a facilitation of equilibrium. If supply and demand are not in equilibrium, one of the two, or both, will adjust so as to restore equilibrium. Increased knowledge will point out the direction in which each party should adjust with the least cost to themselves, and may point out which party should adjust so as to minimize societal costs.

Although there are many variables to consider, although supply and demand are heterogeneous, we can establish several basic groups of variables, eventually define the functional relations, and establish the points of agglomeration.

The verbal model. The total supply of college teachers includes all those individuals who are able and willing to work at IHE's. Demand in the academic labor market is restricted to the demands of IHE's and does not include the demands of other "firms" which make use of the academic supply. Each person, and each employer, is distinguished from others by three basic groups of elements --availability, suitability, and findability. Availability is the group of factors determining the job choice criteria for supply and is paralleled on the demand side by the conditions of employment offered. Suitability is determined actively by demand as th4 hiring qualifications and is met passively by the supply with varying characteristics. Findability is the ignorance element in the market. It determines the relative locations of supply and demand, indicates the marginal considerations and, consequently, indicates the probability of the two contacting each other.

Each supply and demand factor is thus a vector composed of these elements. Since each of these elements has more than one component, each of the factors is a 9 component vector. When both supply and demand are defined, they will come in contact with each other in a 9 dimensional vector space,[3] the "labor market." However, since the market is balkanized, the space will be characterized by agglomerations and isolation of supply and demand vectors. All demand vectors will not contact all supply vectors. Whenever a supply and demand vector come into contact, a labor market will exist. In fact, each market will contain more than one supply and demand vector, particularly if knowledge can be increased. In actuality, the vectors will take on value ranges. The components will not be defined precisely, but will take on any value between two limits, facilitating employment, so that whenever supply and demand vectors fall within the same range, employment possibility will be increased. Thus one of the supply's components may have taken on the specific value 3, and demand may have taken on the value 2, preventing employment from arising if strict equality between the components were necessary. However, if supply takes on the value range (2,4) and demand (1,3) they can establish an employment situation. The ideal employment, from the viewpoint of supply and demand, will occur when the demand and supply vectors are equal, in strict mathematical terms, meaning each component is equal. Increased knowledge in the market means that the value ranges can be decreased, and yet contact between supply and demand will be increased.

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[3] Abbott, p. 16.

A mathematical model. Converting to mathematical terms, the following definitions are in order:

Aggregate Supply = $S = \{ s_1, s_2, \ldots\ldots\ldots s_n\}$

Aggregate Demand = $D = \{ d_1. d_2, \ldots\ldots\ldots d_n\}$

Where: $s_i \in S$, and $s_i = \{c_i, j_i, n_i, p_i, b_i, h_i, m_i, w_i, r_i\}$

and: $d_i \in D$, and $d_i = \{c_i, j_i, n_i, p_i, b_i, h_i, m_i, w_i, r_i\}$

and $c_i \in C$; $j_i \in J$; $n_i \in N$; $p_i \in P$; $b_i \in B$; $h_i \in H$; $m_i \in M$; $w_i \in W$; $r_i \in R$; for both s_i and d_i.

Employment possibilities will arise (a labor market) whenever, $S_j \times D_k = N_p$, where $S_j \subset S$, and $D_k \subset D$. From this set of possible employments N_p, arises the set of actual employments N_a, defined by a relation for this Cartesian product. One such relation would be equality. $N_a = \{ (s_i, d_i) : s_i = d_i$, and $(s_i, d_i)\ N_p\}$. This would be the ideal employment condition as far as demand and supply are concerned, but not necessarily for society. However, many hirings would result where the vectors were not equal, and others falling within some minimum value range. Delineating such possibilities would serve no vital purpose.

As elements of sets, the various components can be defined functionally.

Availability determinants. These components are all defined in the "eyes of supply" while demand is a passive participant, for supply's tastes, their job choice criteria, may change, but for demand, these various components are "given," at least in the short run.

The availability components fall into three basic groups, the monetary compensations, the job preferences and conditions, and the environmental conditions. They are the sets, C, J, and N, respectively.

Based upon the survey data, the relevant variables determining these sets are as follows.

$$C = \{ c_i : c_i = f(y, I_i, u_i) \}$$

Where y = the net monetary advantage, including the basic contract salary, outside income opportunities, fringe benefits, and future income possibilities. I_i = the personal characteristics of the individual, notable sex, race and religion. u_i = the activity last year.

$$J = \{ j_i : j_i = f(p_{r-t}, q, K, T) \}$$

Where: p_{r-t} is the individual's preference for research or teaching, q = the quality of the school, and thus the quality of the students, for those who prefer teaching, K = the research facilities and opportunities. T = the teaching load, and includes hours and courses taught. It is easily seen that the relative importance of K or q will depend on the value of p_{r-t}, and that K will vary with the size and level of the IHE.

$$N = \{ n_i : n_i = f(L_t, \mu_t, \psi_t, q_t) \}$$

Where L_t = the level of the school under consideration, μ_t = the size, ψ_t the control, q_t = the quality of the school under consideration. This is an attempt to objectify such measures as "administration," "congeniality of colleagues," and "competency of students and colleagues." Location could also have been a determinant; however, the survey has shown that it is the least important job choice criterion and more properly is included in the finability components where regional consideration will influence job search.

Suitability Determinants. These components are most actively specified by demand. The previous availability components were "given" for demand, while now the suitability requirements are "given" for supply. At any point in time, a man will have only so much education, so many years of experience, and accomplished only so many publications. He either meets the hiring requirements or he does not. The school may, however, alter its requirements. Again there are three such components: productivity, background, and job specifications. These are respectively the sets P, B, and H.

$$P = \{ p_i : p_i = f(a_i, \phi_i, z) \}$$

Where a_i = the number of articles and books published by the individual, ϕ_i is the number of years of experience, and z = an index number of the publication opportunities the individual has had, enabling his publications to be evaluated comparably to others who have had heavier teaching loads and non-specialized teaching loads. It will basically convert his publications into "real" terms.

$$B = \{ b_i : b_i = f(u_i, L_{t-1}, \mu_{t-1}, q_{t-1}, G) \}$$

Where u_i = activity last year, L_{t-1} = the level of the school at which the individual is currently located. μ_{t-1} = the size, and q_{t-1} = the quality of the supply}s current location. (In the survey, this is known as "last year's school."), and G = the quality of the graduate school.

$$H = \{ h_i : h_i = f(F, \eta, e_i) \}$$

Where F = the broad field which encompasses similar disciplines, such as the social sciences, η = the substitutability of the specific discipline within the field F, and e_i = the degree held, and represents the fact that certain degrees are in various demands by different schools, and at the same time some degrees are more or less substitutable than others.

Findability determinants. The purpose of these determinants is to indicate the extent of movement for various groups of supply and the direction of their movement, as well as the direction and extent of demand. In keeping with our vector theory, we could define several components for each of these as follows.

$$M = \{ m_i : m_i = f(x_i, e_i, I_i) \}$$

Where x_i indicates the specific discipline in which the individual is interested, e_i is his degree level, and I_i is personal characteristics. All of these will influence his propensity to move, m_i .

$$W = \{ w_i : w_i = f(u_i, L_{t-1}, \mu_{t-1}, \psi_{t-1}, q_{t-1}. g_{t-1}) \}$$

Where u_i is the activity last year, and the other variables are the level (L), size (μ), control (ψ), quality (q), and location (g) of last year's school. This will indicate the tendency to move within certain portions of the market, as well as the extent of demands hiring within certain parts of the market.

$$R = \{ r_i : r_i = f(g_i, \beta_i, I_i) \}$$

Where g_i is the location of the individual, β_i is the "size of the market" within any region, I_i is the personal characteristics of the individual. Again, all of these will influence his propensity to move interregionally.

By noting the propensity to move for any individual, demand will realize the probability that added recruitment costs will be fruitful. Similarly supply will realize the possibility and desirability of extending their market area.

There is a variation or merely another and advantageous application of the finability components. If aggregate measures were used, supply and demand would realize the probability of increasing the area of search even without knowledge of a specific position or faculty member available. In this way, reduced ignorance, by means of increased probability, will increase specific knowledge of the market, making the other vector components that much more useable.

An empirical conjecture. The precise functional relations between the variables delineated in the preceding sections will await further research, as well as the use to which the model should be applied. It will certainly be of use in a centralized market, indicating to any demander and supplier, the vectors relevant to their positions. Even without a centralized information bureau, the vectors will be of help in increasing the knowledge of the market and the size of the market. Eventually a third set of vectors could be established, indicating societal preferences, and thus bring about a more optimum distribution of labor.

As an indication of the way numbers can be applied to the model, the following is offered, based on the survey data.

If we consider the job specification component, the third component in the suitability group, we could construct a function, very simple, where the individual's suitability depended upon the field in which his discipline fell (F) and the ability to be substituted within his field (μ), dependent upon his degree (e_i). It will be necessary to rank the various fields. If we base these rankings upon the average salary of the fields, there would be the advantage of indicating that any school which was willing to hire a high valued component, could, if it were willing to alter its hiring requirements, hire any lesser valued component. At the same time it will indicate that supply will set a salary minimum and will accept employment for any higher value. The full extent of the component is dependent upon the substitutability of the individual, which in turn will depend upon the degree held by the individual. This poses somewhat of a problem, for demand will be interested in an individual who can be used where they need him, one that is substitutable. A doctorate is no doubt more capable of being so substituted, however, the individual is probably less willing.[4] However, if we use the method of having the doctorates more substitutable, we keep the idea of the higher valued component being more highly valued. Thus a master's degree holder is perhaps two-thirds as substitutable as a doctorate in the same discipline.

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[4] A societal optimum would desire that a doctorate be specializing while he is teaching, so that the state of knowledge can be more rapidly advanced.

Our simple function, more appropriately, a formula, will be $h_i = \dfrac{\eta \times e_i}{Ph.D.}$. For example, if we have a civil engineer, he will receive an F rating = 17, since engineering is the highest paying of the 17 broadly defined fields in our survey. The substitutability of a civil engineer within engineering is 11.4%. If we assume this is the substitutability for a Ph.D., and if our individual has only an M.A., his substitutability is 7.6%, and consequently his total component is 24.6 . By substituting in the formula, we have:

$h_i = \dfrac{17 + 11.4 \times 2}{3} = 24.6$ (We have assumed that an M.A. = 2 if a Ph.D. = 3, however, much more precise measures could be defined.)

A value of 24.6 means that the individual is qualified to work for any IHE looking for a disciplinarian between 17 and 24.6. Conversely if there is a demand with the same valued component, it means that the IHE is willing to and capable of hiring anyone whose "h" component is equal to, or less than 24.6 .

The preceding was only an indication of the use of the model. More sophisticated applications will require more research on the portion of supply which has not moved, the relationships among the variables indicated, and the demand side of the picture.

The findability components would seem to be almost immediately applicable, and would not necessarily have to be complemented by the other components. Such progress as can be made in establishing the findability components will increase the knowledge concerning the other components.

Department of Economics
The University of North Carolina
at Chapel Hill

B.O.B. No. 44-6412
Approval Expires 9/30/65

ACADEMIC LABOR MARKET STUDY

Dear Newly Appointed Faculty Member:

This is a study of college professors who moved to a new institution in 1964. The study is financed by the National Science Foundation and the U. S. Department of Labor, Office of Manpower, Automation and Training, and conducted by the Department of Economics of the University of North Carolina.

We are interested in learning how and why college professors find and select new jobs. Our intent is to appraise the role currently played by placement and referral agencies and to evaluate various proposals for improving the flow of manpower through academic markets. Your cooperation is requested.

Thousands of newly appointed professors are being asked to fill out this questionnaire and return it to us for statistical analysis. Information obtained from this questionnaire will be kept strictly confidential.

We are asking everyone to fill in the first four questions. You can aid research and save follow-up costs by responding promptly. An addressed envelope requiring no postage is provided for your convenience. Note that an answer is expected for every part of each item. We appreciate your help in making this study a success.

Sincerely yours,

David G. Brown
Associate Professor of Economics
University of North Carolina

Part I. Preliminary Questions

1. Are you now working toward a degree at the *same* institution at which you are teaching? ☐ Yes ☐ No

2. Are you on active military duty? ☐ Yes ☐ No

3. Do you teach as an unsalaried member of a religious order? ☐ Yes ☐ No

4. Are your primary teaching responsibilities in a school of law, medicine, dentistry, nursing, or pharmacy? ☐ Yes ☐ No

IF YOU ANSWERED "YES" TO ANY OF THE ABOVE QUESTIONS, PLEASE STOP AND RETURN THIS QUESTIONNAIRE IN THE ENCLOSED STAMPED ENVELOPE.

5. Are you a full-time employee of the institution listed above for at least 9 months of the academic year 1964-65?

☐ Yes ☐ No

IF YOU ANSWERED "NO" TO QUESTION 5, PLEASE STOP AND RETURN THIS QUESTIONNAIRE IN THE ENCLOSED STAMPED ENVELOPE.

Part II. Personal Data

6. When were you born?

0 ☐ Before 1899
1 ☐ 1899-1903
2 ☐ 1904-1908
3 ☐ 1909-1913
4 ☐ 1914-1918
5 ☐ 1919-1923
6 ☐ 1924-1928
7 ☐ 1929-1933
8 ☐ 1934-1938
9 ☐ After 1938

A5

7. Sex: 1 ☐ Male 2 ☐ Female

A6

8. How many credit hours are you teaching this term? (Check the number nearest the actual.)

0 ☐ None
1 ☐ 3 credit hrs.
2 ☐ 6 credit hrs.
3 ☐ 9 credit hrs.
4 ☐ 12 credit hrs.
5 ☐ 15 credit hrs.
6 ☐ 18 credit hrs.
7 ☐ 21 credit hrs.
8 ☐ 24 credit hrs.

A7

IF "NONE" STOP AND RETURN QUESTIONNAIRE.

9. Please provide the information requested below concerning your education. (Include post-doctoral training.)

Name and Location (State) of School Attended	Name of Degree	Date of Degree
High School last attended: A8		
Higher education: A9-13 A14-16		
	A17	A18

IF MORE SPACE IS NEEDED, PLEASE ATTACH A SEPARATE SHEET.

FOR ANSWERING THE NEXT 5 QUESTIONS, USE THE SUBJECT FIELD CODE. (WRITE CODE NUMBERS ON THE LINE PROVIDED.)

10. In what field is your highest degree? ________ (code no.) A19

11. What is your principal teaching field in your present position? ________ (code no.) A20

2. In what other field are you teaching? If none, put "0". ________ (code no.) A21

13. What is your primary field of scholarship, research, or creativity? ________ (code no.) A22-23

Subject Field Code

1 AGRICULTURE (Exclude Forestry)

BIOLOGICAL SCIENCES
- 2 Bacteriology
- 3 Biochemistry
- 4 Biophysics
- 5 General Botany
- 6 Genetics
- 7 General Biology
- 8 Microbiology
- 9 Pharmacology
- 10 Physiology
- 11 General Zoology
- 12 Other

BUSINESS AND COMMERCE
- 13 Accounting
- 14 Bus. (or Commercial) Ed.
- 15 General Business
- 16 Other

EDUCATION
- 17 Elementary Education
- 18 Secondary Education
- 19 Foundations: Historical, Soc., and Philosophical
- 20 Ed Psychology (include growth and development eval. and measurement) (exclude 58-61)
- 21 Services: Administrative and Supervisory
- 22 Services: Student Personnel and Guidance (exclude 62)
- 23 Other (exclude 47, 48, 53)

ENGINEERING
- Chemical
- Civil
- 26 Electrical
- 27 Mechanical
- 28 Other

ENGLISH AND JOURNALISM
- 29 English and Literature
- 30 Journalism
- 31 Other

FINE ARTS
- 32 Art
- 33 Dramatics and Speech
- 34 Music
- 35 Other

FOREIGN LANGUAGES AND LITERATURE
- 36 Classical
- 37 French
- 38 German
- 39 Spanish
- 40 Russian
- 41 Other (including philology)

HEALTH FIELDS
- 42 Dentistry
- 43 Medicine
- 44 Nursing
- 45 Pharmacy
- 46 Other

47 HOME ECONOMICS
48 INDUSTRIAL ARTS
49 LAW
50 LIBRARY SCIENCE
51 MATHEMATICS
52 PHILOSOPHY
53 PHYSICAL AND HEALTH ED.

PHYSICAL SCIENCES
- 54 Chemistry
- 55 Earth Sci. (and Geology)
- 56 Physics
- 57 Other

PSYCHOLOGY
- 58 Clinical
- 59 Experimental
- 60 Industrial
- 61 Social
- 62 Counseling and Guidance
- 63 Other

64 RELIGION AND THEOLOGY

SOCIAL SCIENCES
- 65 Agricultural Economics
- 66 Anthropology
- 67 Economics
- 68 History
- 69 Political Science (Gov.)
- 70 Social Work
- 71 Sociology
- 72 Other

73 STATISTICS

74 ALL OTHER FIELDS

Part III. Previous Job

14. What was your primary activity during the academic year 1963-64? (Check only one.)

☐ Check here and skip to Question 15 if you were on leave from an institution of higher education last year. Answer questions 15 through 21 as if you had not been on leave.

1 ☐ Student (Include "student and part-time teacher" and "student and research assistant.")
2 ☐ Teacher in higher education
3 ☐ Administrator in higher education
4 ☐ Teacher or administrator in primary or secondary school
5 ☐ Business employee
6 ☐ Government employee (exclude military)
7 ☐ Military service
8 ☐ Foundation employee
9 ☐ Other. Please specify:

A24

QUESTIONS 15 THROUGH 20 ARE ABOUT YOUR PREVIOUS TEACHING JOB. IF YOU WERE NOT PRIMARILY A "TEACHER IN HIGHER EDUCATION" LAST YEAR, CHECK HERE ☐ AND SKIP TO QUESTION 21. OTHERWISE, ANSWER THE FOLLOWING QUESTIONS.

15. In the rectangle below, write in the name of the school where you were employed last year.

☐

A25-28

16. What was your academic rank last year?

1 ☐ Instructor
2 ☐ Assistant Professor
3 ☐ Associate Professor
4 ☐ Full Professor
5 ☐ Institution has no ranking system
6 ☐ Other

A29

17. Which of the following words best explains the urgency of your desire to locate a new job for 1964-65? (Check one.)

1 ☐ My old job was unacceptable and I had a strong desire to move.
2 ☐ My old job was unavailable and I had to move.
3 ☐ My old job was acceptable, yet I felt I could do better and was looking around.
4 ☐ My old job was acceptable, yet I was keeping my ears open and remaining available.
5 ☐ I was quite satisfied with my previous job and had not seriously thought about moving.

IF "UNAVAILABLE" (i.e., option 2.), SKIP TO QUESTION 21. OTHERWISE, GO ON TO QUESTION 18. A30

18. What was wrong with your previous job that caused you to want to leave? (Check one or two of the most important factors.)

1 ☐ Friends and relatives too far away
2 ☐ Climate undesirable
3 ☐ Cultural opportunities poor
4 ☐ Colleagues not congenial
5 ☐ Colleagues not competent
6 ☐ Reputation of school among scholars poor
7 ☐ Administration or administrators not competent
8 ☐ Research facilities and opportunities poor
9 ☐ Courses assigned undesirable
10 ☐ Teaching hours excessive
11 ☐ Quality of students poor
12 ☐ Advancement prospects in academic rank poor
13 ☐ Salary too low
14 ☐ Fringe benefits poor
15 ☐ Opportunities for outside income poor
16 ☐ Future salary prospects poor
17 ☐ Other. Please specify:

A31-34

19. In the rectangle below, write your best estimate of what your annual income would have been in 1964-65 (Sept. to Sept.) if you had remained at your previous job. (Include salary, extra teaching, honoraria, and income from part-time jobs. Exclude dividends, gifts, interest, royalties, and sales of manuscripts.)

$

A35-38

20. Approximately how much higher than the amount noted in Question 19 would your annual income had to have been in order to induce you to stay at your previous job? (Check one. Assume that nothing else about the previous job changed.)

1 ☐ $0-$499
2 ☐ $500-$999
3 ☐ $1000-$1999
4 ☐ $2000-$4999
5 ☐ $5000-$9,999
6 ☐ $10,000-$24,999
7 ☐ More than $25,000

A39

Part IV. Methods of Locating Job

21. Listed below are some of the methods used to learn about jobs. (See instructions at Questions 21a, 21b, 21c and 21d.)

Methods	Column 21a (Methods Used)	Column 21b (No. of Jobs Found
(1) Contacted an undergraduate professor who had taught me	☐ A40	(_____) A57
(2) Contacted a graduate school professor who had taught me	☐ A41	(_____) A58
(3) Informed the department office at my graduate school	☐ A42	(_____) A59
(4) Informed a classmate from graduate school	☐ A43	(_____) A60
(5) Informed a present or former faculty colleague	☐ A44	(_____) A61
(6) Informed another professional friend	☐ A45	(_____) A62
(7) Informed a publisher's representative	☐ A46	(_____) A63
(8) Consulted a college placement office	☐ A47	(_____) A64
(9) Consulted a convention placement service	☐ A48	(_____) A65
(10) Consulted the U. S. Employment Service (other than at a convention)	☐ A49	(_____) A66
(11) Advertised my availability in a professional journal	☐ A50	(_____) A67
(12) Answered an advertised "job available" in a professional journal	☐ A51	(_____) A68
(13) Consulted denominational placement bureau or board	☐ A52	(_____) A69
(14) Consulted a commercial teachers' agency	☐ A53	(_____) A70
(15) Sent letters of inquiry directly to potential employers	☐ A54	(_____) A71
(16) Consulted placement service of professional or educational association	☐ A55	(_____) A72
(17) Did nothing and was recruited	☐ A56	(_____) A73
(18) Used another method. Specify.		

21a. In COLUMN 21a (in the appropriate squares) check each of the methods you used to inform others of your willingness to move or to learn about job vacancies. Consider the period from June, 1963 to September, 1964.

21b. In COLUMN 21b (on the appropriate lines) write the number of job offers that you first learned about by each method. (Interpret "job offers" to mean "I'm certain or almost certain that I could have had the job if I wanted it.")

21c. For each of the methods that you did not use (i.e., did not check in COLUMN 21a), indicate which of the reasons listed below best explains why you did not use the method *by placing the appropriate letter code* in the *empty squares* in COLUMN 21a.

LETTER CODE (Use in answering Question 21c):

(A) It is unprofessional to use this method. It is beneath the dignity of a college professor.

(B) Good jobs are rarely found by this method. It takes more time than it is worth.

(C) Good jobs are sometimes found by this method, but there are better ways. I would have pursued this method if I had not found a job by other means.

(D) Good jobs are found by this method but I did not have the right contacts.

(E) Good jobs are found by this method but I was afraid my then current employer would find out that I was looking for another job.

(F) I did not know that jobs could be found by this method.

(G) I was not looking for a job in any way.

Every square in Column 21a should have either a check or a letter in it. If not, please re-answer questions 21a and 21c.

21d. Indicate how you first learned about your current job by placing the appropriate number from the left margin of this page (i.e., 1 through 18) in the rectangle below.

Method Number: ☐

A75-76

IF YOU WERE NOT PRIMARILY TEACHING IN HIGHER EDUCATION LAST YEAR, CHECK HERE ☐ AND SKIP TO QUESTION 23. OTHERWISE, GO ON TO QUESTION 22.

22. Indicate how you first learned about your previous job by writing the appropriate number from the left margin of this page in the rectangle below.

Method Number: ☐

A77-78

23. How many letters of inquiry sent directly to potential employers did you write (between June, 1963, and September, 1964)?

0 ☐ None
1 ☐ One
2 ☐ Two-Five
3 ☐ Six-Ten
4 ☐ Eleven-Fifteen
5 ☐ Sixteen-Thirty
6 ☐ Thirty-one-Sixty
7 ☐ More than Sixty

B6

24. How many professional conventions did you attend between September 1, 1963 and September 1, 1964?

0 ☐ None
1 ☐ One
2 ☐ Two
3 ☐ Three
4 ☐ Four
5 ☐ Five
6 ☐ Six
7 ☐ Seven
8 ☐ Eight
9 ☐ Nine or more

B7

25. You are a member of how many professional associations? (e.g., American Historical Association)

0 ☐ None
1 ☐ One
2 ☐ Two
3 ☐ Three
4 ☐ Four
5 ☐ Five
6 ☐ Six
7 ☐ Seven
8 ☐ Eight or more

B8

26. Which of the following statements best describes, in your opinion, the opportunities for learning about vacant teaching jobs in your field? (Check only one.)

1 ☐ *Excellent.* Vacancies are well known. There is almost no chance that a candidate will not learn about a vacancy for which he might be qualified.

2 ☐ *Good.* With some effort, most candidates learn about most vacancies for which they might be qualified.

3 ☐ *Poor.* Most candidates never learn about many of the jobs for which they might be qualified. New methods of informing candidates of job vacancies should be investigated.

4 ☐ *Very Poor.* A candidate rarely learns about the job vacancy that would interest him the most. New methods of informing candidates must be implemented.

B9

Part V. Job Offers

27. Approximately how many different jobs, starting about the same time as your present job, were you considering and how seriously were you considering them? (Write the total number of jobs on each line. Do not count any job twice. Include the job offer that you accepted.)

Number of Jobs

(________) Investigated, but did not have a personal interview with employer
B10

(________) Had personal interview, but either did not pursue or did not receive a concrete offer
B11

(________) Received concrete offer (i.e., I was told that if I wanted the job it was mine.)
B12

28. Please list the concrete offers you received and estimate the annual incomes involved. (List your current job first, other teaching jobs next, and non-teaching jobs last.)

Name of Employer	Location (State)	Job Title	Approximate Annual Income*
Current Job: B13-19		B20-21	B22-27
Other Job Offers: B28-34		B35	B36-38
B39-45		B46	B47-49
B50-56		B57	B58-60
B61-67		B68	B69-71
			B72-74

*Include salary, consulting, and income from part-time jobs. Exclude dividends, interest, gifts, royalties, and sale of manuscripts.

(IF YOU NEED MORE ROOM, PLEASE ATTACH A SEPARATE SHEET.)

29. If you had not accepted your current job, what would you *probably* be doing this year?

0 ☐ Retired
1 ☐ Student
2 ☐ Teacher in higher education
3 ☐ Administrator in higher education
4 ☐ Teacher or administrator in primary or secondary school
5 ☐ Business employee
6 ☐ Government employee
7 ☐ Military service
8 ☐ Foundation employee
9 ☐ Other

IF ABOVE ANSWER WAS NOT "TEACHER IN HIGHER EDUCATION," SKIP TO QUESTION 34. OTHERWISE, GO ON TO THE NEXT QUESTION.

B75

30. Please name the institution of higher education where you would *probably* be working this year if you had not accepted your current job.

C6-12

Name:

31. **On the following items, compare your current job with the one which you would probably be working at had you not obtained this one (i.e., the job listed in Question 30.). Check once in each row.**

	Current Job is —			
	Much Better ↓	**About the Same** ↓	**Much Worse** ↓	
(1) Congeniality of colleagues				C13
(2) Competency of colleagues				C14
(3) Reputation of school among scholars				C15
(4) Courses taught				C16
(5) Teaching load				C17
(6) Administration and administrators				C18
(7) Quality of students				C19
(8) Academic Rank				C20
(9) Research facilities and opportunities				C21
(10) Salary				C22
(11) Fringe benefits				C23
(12) Opportunities for outside income				C24
(13) Future salary prospects				C25
(14) Nearness to graduate school				C26
(15) Nearness to friends and relatives				C27
(16) Climate				C28
(17) Cultural opportunities				C29

32. **How important were each of these factors in your decision to choose your current job instead of the job listed in Question 30? Check once in each row.**

Job Characteristics	**Very Important**	**Important**	**Not Important**	
(1) Congeniality of colleagues	1 ☐	2 ☐	3 ☐	C30
(2) Competency of colleagues	1 ☐	2 ☐	3 ☐	C31
(3) Reputation of school among scholars	1 ☐	2 ☐	3 ☐	C32
(4) Courses taught	1 ☐	2 ☐	3 ☐	C33
(5) Teaching load	1 ☐	2 ☐	3 ☐	C34
(6) Administration and administrators	1 ☐	2 ☐	3 ☐	C35
(7) Quality of students	1 ☐	2 ☐	3 ☐	C36
(8) Academic rank	1 ☐	2 ☐	3 ☐	C37
(9) Research facilities and opportunities	1 ☐	2 ☐	3 ☐	C38
(10) Salary	1 ☐	2 ☐	3 ☐	C39
(11) Fringe benefits	1 ☐	2 ☐	3 ☐	C40
(12) Opportunities for outside income	1 ☐	2 ☐	3 ☐	C41
(13) Future salary prospects	1 ☐	2 ☐	3 ☐	C42
(14) Nearness to graduate school	1 ☐	2 ☐	3 ☐	C43
(15) Nearness to friends and relatives	1 ☐	2 ☐	3 ☐	C44
(16) Climate	1 ☐	2 ☐	3 ☐	C45
(17) Cultural opportunities	1 ☐	2 ☐	3 ☐	C46

IF YOU RATED FRINGE BENEFITS AS "NOT IMPORTANT" SKIP TO QUESTION 34. OTHERWISE, GO ON TO QUESTION 33.

33. Check the one or two fringe benefits most important in your decision.

1 ☐ Retirement plan
2 ☐ Leave with pay
3 ☐ Tuition for faculty children
4 ☐ Medical package
5 ☐ Secretarial and other assistance
6 ☐ Other. Specify: C47

34. *If* you could work at any school in the United States, name the one (or one among several) where you would like to teach most.

Name of school:

C48, 49-55

Part VI. Current Job

35. When did you assume duties at your current job?

☐ Fall, 1964
☐ Summer, 1964
0 ☐ Spring, 1964
0 ☐ Other. Specify: C56

35a. When did you make your final, binding commitment to accept your present position? (Check one. Estimate if you don't remember the exact date.)

1 ☐ Before Sept., 1963
2 ☐ Sept.-Dec., 1963
3 ☐ Jan.-March, 1964
4 ☐ April-May, 1964
5 ☐ June-July, 1964
6 ☐ August-Sept., 1964
C56

35b. When did you first learn that a position might be available at your current institution? (Check one. Estimate if you don't remember the exact date.)

1 ☐ Before Sept., 1963
2 ☐ Sept.-Dec., 1963
3 ☐ Jan.-March, 1964
4 ☐ April-May, 1964
5 ☐ June-July, 1964
6 ☐ Aug.-Sept., 1964
C57

36. With whom did you have the most dealings about securing your present job? (Check one.)

☐ Department (division) chairman
1 ☐ Dean
2 ☐ President
3 ☐ Other. Please specify: C58

IF YOU DID NOT ANSWER "DEPARTMENT (DIVISION) CHAIRMAN," CHECK ☐ AND SKIP TO QUESTION 38. OTHERWISE, GO ON TO QUESTION 37.

37. How many new faculty has your department (division) chairman hired to start in 1964? (Check one)

4 ☐ Only myself
5 ☐ One other
6 ☐ Two others
7 ☐ Three or four others
8 ☐ Five or more others
9 ☐ Don't know C58

38. Did you have a personal interview before you accepted the job? (Check the first one that applies.)

1 ☐ Campus interview at school's expense
2 ☐ Campus interview at own expense
3 ☐ Personal interview, not at campus
4 ☐ Telephone interview
5 ☐ No interview C59

39. What is the person whom you replaced doing this year? (Check one only.)

0 ☐ Check here and skip to Question 40 if the person is on leave (e.g., sabbatical, government, research, visiting professor at another institution)
1 ☐ Had no predecessor
2 ☐ Working at another academic institution
3 ☐ Working at the same institution as an administrator
4 ☐ Working in government
5 ☐ Working in business
6 ☐ Attending graduate school
7 ☐ Retired
8 ☐ Deceased
9 ☐ Don't know
☐ Other. Please specify: C60

40. How long do you think you will remain at your current institution? (Check one only.)

0 ☐ Until retirement
1 ☐ This year only
2 ☐ Probably 2 to 3 years
3 ☐ Probably 4 to 10 years C61

41. At the present time, how do you rate your current job?

0 ☐ Excellent, better than I expected.
1 ☐ Good, about the best I could expect.
2 ☐ Poor, not as good as it should be.
3 ☐ Very poor, unacceptable. C62

42. What is your basic salary for the regular academic year? (Exclude "other income" such as summer school teaching.)

$ C63-65

43. How many months are you expected to work for this salary?

1 ☐ Nine or Ten months
2 ☐ Eleven or twelve months
3 ☐ Less than nine months C66

Part VII. Background Information

44. About how many days of productive time did you lose looking for and at jobs?

1 ☐ Less than one day
2 ☐ 2 days to 1 week
3 ☐ 1 to 2 weeks
4 ☐ 2 to 4 weeks
5 ☐ More than 4 weeks
6 ☐ Don't know C67

45. About how many days of productive time did you lose when moving?

1 ☐ Less than one day
2 ☐ 2 days to 1 week
3 ☐ 1 to 2 weeks
4 ☐ 2 to 4 weeks
5 ☐ More than 4 weeks
6 ☐ Don't know C68

46. Who paid the moving costs?

1 ☐ I paid most of them
2 ☐ The school paid most or all
3 ☐ The school and I split the cost
4 ☐ Moving costs were paid by a third party
5 ☐ I didn't move the location of my residence C69

47. How many miles did you move?

1 ☐ None
2 ☐ Less than 50
3 ☐ 51-200
4 ☐ 200-500
5 ☐ 500-1000
6 ☐ Over 1000 C70

48. Did you own your home at your previous job?

0 ☐ Did not have previous job
1 ☐ Yes
2 ☐ No C71

49. What is your religious preference?

1 ☐ Protestant. Please specify denomination:

2 ☐ Roman Catholic
3 ☐ Jewish
4 ☐ Other. Please specify:
5 ☐ No religious preference C72-73

50. What have you published in the last five years? (In each of the spaces below write in the appropriate number. If "none," write "0". Include coauthorship.)

(_____) Books

(_____) Monographs and articles in professional journals. (Do not include newspaper articles, instructional material published only for your classes, book reviews, and short notes of less than one page.)

(_____) Art pieces, patents, and other creative works of a major nature, especially if exhibited or sold for large sums. C74 (75)

51. What is your race?

1 ☐ Caucasian
2 ☐ Negroid
3 ☐ Oriental
4 ☐ Other. Please specify: C76

52. What is your marital status?

1 ☐ Single
2 ☐ Married, living with husband or wife
3 ☐ Separated, divorced, or widowed C77

53. Number of dependent children under 21 years of age:

0 ☐ None
1 ☐ One child
2 ☐ Two children
3 ☐ Three children
4 ☐ Four children
5 ☐ Five children
6 ☐ Six children
7 ☐ Seven children
8 ☐ Eight children
9 ☐ Nine or more children C78

54. During a typical week do you spend more time "teaching and counseling" or more time "researching and writing"?

1 ☐ Teaching and counseling
2 ☐ Researching and writing
3 ☐ Equal time spent C79

PLEASE RETURN TO ECONOMICS, CHAPEL HILL, N. C.
THANK YOU FOR YOUR TIME AND COOPERATION.